NATIONAL HIGHWAYS AUTHORITY OF INDIA
(MINISTRY OF ROAD TRANSPORT & HIGHWAYS)

Short term improvements and Routine Maintenance of NH-2 from km.584.929 to km 651.576 of Palsit-Dankuni Section in the state of West Bengal for the period of four months
(Contract Package: O&M/NH-2/2021-22/Palsit-Dankuni)

Notice Inviting e-Tender,
NIT No. 15/2021-22/NH-2/O&M/Pal - Dan

BID DOCUMENT

Volume-I

The Chief General Manager (T)
National Highways Authority of India
Regional Officer-Kolkata, Synthesis Business Park,
Wing - C, 8th Floor, CBD/1, JL-23
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Jan 2022

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(SECTION-I)
NOTICE INVITING TENDER
(E-TENDERING MODE ONLY)

Short Term Notice Inviting Tender

(National Competitive bidding through e-Tendering mode only)

NIT No. 15/2021-22/NH-2/O&M/Pal-Dan

The National Highways Authority of India (NHAI) hereby invites bid through e-tendering from experienced firms/ organizations for short-term improvement and routine maintenance contracts for the following sections of the National Highways: -

Sl. No.	Section	NH-No.	Length (in km.)	State	Estimated Cost (Rs.)
1.	Short Term Improvement and Routine Maintenance of Palsit - Dankuni (Km.584.929 to Km.651.576) Section of NH - 19 (Old NH - 2) in the state of West Bengal for the period of four months **[Contract Package no. O&M/NH-2/2021-22/Palsit-Dankuni]**	19 (old NH-2)	66.647	West Bengal	4,82,38,820/-

Cost of Bid Documents (non-refundable) : **Rs 25,000/-** including taxes (through online payment in favour of National Highways Authority of India, Canara Bank, A/c no. 95911010007131, IFSC Code: CNRB0019525)

The preliminary requirements (detailed requirements are given in the Bid Document) of bidding firm / contractor for above packages are mentioned as under: -

Bid Security (Rs.)	Average Turn-over during last 3 years (Rs. in lakhs)	Work of similar nature during last 7 years (Rs. in lakhs)	Time for completion
Only Bid Security declaration to be given as per MoRT&H Letter No. 102655/2020/GM(CMD) Office dated 17.11.2020	**144.72 lakhs**	Single work of **386 lakhs** OR Two works of **241 lakhs** OR Three works of **193 lakhs**	04 Months

The Scope of Work includes the routine maintenance of all assets, facilities and services created within R.O.W. on the above mentioned sections of National Highways including maintenance of carriage way, shoulders, etc., providing incident management by way of route patrol and surveillance, road property management etc., for a period of 04 months.

It is mandatory for all the bidders to have class-III Digital Signature Certificate **(With Both DSC Components, i.e. Signing & Encryption in the name of authorized signatory (who will sign the Bid)** from any of the licensed Certifying Agency (Bidders can see the list of licensed CA's from the link www.cca.gov.in to participate in e-tendering of NHAI.

To participate in the e-bid, it is mandatory for the Applicants to get themselves registered with the NHAI e-Tendering Portal (https://etenders.gov.in). (For any clarifications, e-mail to support-eproc@nic.in)

The last date submission of online bid is **14 Feb 2022 upto 15.00 Hrs** (as mentioned on the e-portal only) ("**Bid Due Date**"). The detailed tender document can be viewed / downloaded/

purchased from the website https://etenders.gov.in or http://www.nhai.gov.in from **25 Jan 2022 to 14 Feb 2022 (upto 15.00 Hrs).**

The complete Bid Document can be downloaded from the NHAI e-tendering portal free of cost. The amendments /clarifications to the bid document if any will be hosted on the above website.

A Pre-Bid meeting will be held at the office of Chief General Manager (Tech) & Regional Officer-Kolkata on 05 Feb 2022 at 13.00 Hrs to clarify the issues and to answer the questions on any matter that may be raised at the stage as stated in the Bidding documents.

The bid should be submitted online in the prescribed format given in the website. No other mode of submission is acceptable.

The authorized signatory holding Power of Attorney shall only be the Digital Signatory. In case authorized signatory holding Power of Attorney and Digital Signatory are not the same, the bid shall be considered nonresponsive.

The last date of submission of online Bid (refer Cl. 12.2) is **14 Feb 2022 upto 15.00 Hrs** (as mentioned on the e-portal only). The bids would be opened on **15 Feb 2022 at 15.00 Hrs** online at NHAI RO-Kolkata, Synthesis Business Park, Wing – C, 8th Floor, CBD/1, JL-23, Action Area –II, New Town, Kolkata – 700156 representatives of the bidders (maximum of two) who choose to attend, may attend the online opening of the bids at NHAI RO-Kolkata on the date and time as mentioned above. However, such representatives shall be allowed to attend the opening of the bids only if they produce letter of authority on the letterhead of the bidder, at the time of opening of bids as mentioned above.

For any clarification, the office of the undersigned may be contacted.

The Chief General Manager (T)
National Highways Authority of India
Regional Officer-Kolkata, Synthesis Business Park,
Wing – C, 8th Floor, CBD/1, JL-23
Action Area –II, New Town, Kolkata – 700156
Phone: 033-2324 8081
E-mail: rokolkatta@nhai.org, rokolnhai@gmail.com

Dated: 25 Jan 2022

Chief General Manager (Tech) &
Regional Officer-Kolkata

(SECTION-II)

INSTRUCTIONS TO BIDDERS

& APPENDIX TO BID

Section II: Instructions to Bidders

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Section II
Instructions to Bidders (ITB)
A. General

1. Scope of Bid

1.1 The Employer (i.e. Chairman, National Highways Authority of India) invites bids for "as described in these documents and referred to as "the works". The name and identification number of the works is provided in the Notice Inviting Tender.

1.2 The successful Bidder will be expected to complete the Works by the intended Completion Date specified in the Contract Data (Part I General Conditions of Contract).

1.3 Throughout these bidding documents, the terms "bid" and "tender" and their derivatives (bidder/tenderer, bid/tender, bidding/tendering, etc.) are synonymous.

2. Source of Funds

2.1 The expenditure on this project will be met by National Highways Authority of India (NHAI).

3. Eligible Bidders

3.1 This Invitation for Bids is open to all bidders meeting the qualification requirements prescribed in this document.

3.2 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government.

4. Qualification of the Bidder

4.1 Deleted

4.2 All bidders shall furnish the following information and documents with their bids in Section-3, Qualification Information.

(a) Scanned copies of original documents defining the constitution or legal status, place of registration, and principal place of business; scanned copy of written power of attorney of the signatory of the Bid to commit the Bidder. (Refer clause 12.2 of ITB).

(b) Scanned copy of total monetary value of Civil Construction works performed for each of the last three years;

(c) Scanned copy of experience certificate in works of a similar nature and size for each of the last seven years with certificates from the concerned officer of the rank of Executive Engineer or equivalent;

(d) Scanned copy of evidence of availability (either owned or leased or rented) of items of construction equipment named in Clause 4.4 B(b) (i).

(e) Scanned copy of the CV of the technical personnel proposed to be employed for the Contract having the qualifications defined in Clause 4.4 B(b) (ii) .

(f) Scanned copy of reports on the financial standing of the Bidder, and a certificate from Chartered Accountant as a proof of turnover for the last three years;

(g) Deleted

(h) Deleted

(i) Deleted

(j) Scanned copy of information regarding any litigation or arbitration during the last five years in which the Bidder is involved, the parties concerned, the disputed amount, and the present status;

(k) Deleted

(l) Deleted.

4.3 Bids from joint ventures are not allowed.

4.4 **A. To qualify for award of the contract, each bidder in its name should have the following; -**

(a) ***achieved an average annual financial turnover (in all classes of civil engineering construction works only) equal to the amount indicated in NIT during last three years ending 31st March of the previous financial year duly certified by Chartered Accountant. (Notwithstanding anything to the contrary contained herein, in the event that the bid due date falls within three months of the closing of the latest financial years, it shall ignore such financial year for the purpose of the bid and furnish annual financial turnover w.r.t. 3 years preceding in last financial year).***

(b) satisfactorily completed (not less than 90% of contract value), as a prime contractor (or as a nominated/approved subcontractor, provided further that all other qualification criteria are satisfied) similar works during last seven years ending last day of month previous to the one in which bids are invited, either of the following:

i. three similar completed works costing not less than amount equal to 40% each of **estimated cost**.

ii. two similar completed works costing not less than amount equal to 50% each of **estimated cost**.

iii. one similar completed work costing not less than amount equals to 80% each of **estimated cost**.

i. ***(The similar work constitutes experience in operation and maintenance/ construction of 4/6 laned highway for O&M contracts)***

(Escalation factor as under shall be used to bring the value of such completed works to the level of current financial year i.e.2021-22) **Escalation factor** (for the cost of works completed during

the last 7 years & financial figures required for the calculation of bid capacity) may be taken as follows:

Year Before	Multiplying Factor
One	1.1
Two	1.21
Three	1.33
Four	1.46
Five	1.61
Six	1.77
Seven	1.95

(c) Deleted

(d) Deleted

(e) Deleted

4.4 B **(a)** Each bidder must upload:

(i) An affidavit on a Stamp Paper, duly attested from the Notary Public, that the information furnished with the bid documents is correct in all respects; and

(ii) Such other certificates as defined in Section- III.

(iii) Failure to upload the certificates/documents as specified above at (i) and (ii) may make the bid non-responsive.

(b) Each bidder must demonstrate:

(i) Evidence of availability (either owned or leased or rented) of the key equipment for this work as stated in the Appendix to ITB and as per Form in Section III.

(ii) Availability for this work of personnel with qualification & experience as stated in the Appendix to ITB.

(c) Deleted

(d) Failure to demonstrate the certificates as specified above at (i) and (ii) may make the bid non-responsive.

4.4 C Deleted

4.5 Sub-Contractors' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria.

4.6 Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:

Available Bid capacity = (A* N* 2.5 - B)

Where

A = Maximum value of civil engineering works executed in any one year during the last three years (escalation factor as specified in this section shall be used to bring the maximum value of civil engineering works to the level of current financial year i.e., 2021-22) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which bid is invited.

B = Value (escalation factor as specified in this section shall be used to bring the value to the level of current financial year i.e., 2021-22) of existing commitments and on-going works to be completed during the next 04 Months (period of completion of the works for which bid is invited)

4.7 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

(i) Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or

(ii) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc. or debarring from NHAI work etc.

(iii) Tampered the bid document in any manner.

5. One Bid per Bidder

5.1 Each Bidder shall submit only one Bid for the work. A Bidder who submits more than one Bid will cause such bids to be disqualified.

6. Cost of Bidding

6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will, in no case, be responsible or liable for those costs.

7. Site Visit

7.1 The Bidder, at his own cost, responsibility and risk, is encouraged to visit, examine and familiarise himself with the Site of Works and its surroundings including source of earth, water, road aggregates etc. and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. He may contact The Project Director, PIU-Kolkata (NHAI) in this regard.

Section II
Instructions to Bidders (ITB)

B. Bidding Documents (On line)

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda (if any) issued in accordance with Clause 10:

Volume- I:-

1. Notice Inviting Tender
2. Instructions to Bidders & Appendix to Bid
3. Qualification Information
4. Forms Bank Guarantee, Agreement & LOA
5. Conditions of Contract & Contract Data
6. Scope of Work
7. Technical Specifications
8. Implementation Manual & Maintenance Intervention Levels

Volume - II:-

Bill of Quantities

Bidders will be required to quote a single percentage above/below the overall estimated amount. This percentage would be applicable for all the items of work in the contract for working out the rates for each item of work.

8.2 DELETED

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, specifications, bill of quantities, etc. in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids, which are not substantially responsive to the requirements of the Bid Documents, shall be rejected.

9. Clarifications on Bid Documents

9.1 A prospective Bidder requiring any clarification on the bid documents may notify the Employer in writing or by cable ("cable" includes facsimile) or through e-tender portal at the Employer's address indicated in the Notice Inviting Tender. The Employer will respond to any request for clarification received earlier than 10 days prior to the deadline for submission of bids. Copies of the Employer's response will be hosted on website or which are required in the opinion of the Employer including a description of the enquiry, but without identifying its source.

9.2.1 Deleted

9.2.2 Deleted

9.2.3 The bidder is requested to submit any questions in writing or by cable so as to reach the Employer not later than one week before the meeting.

9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of the enquiry) and the responses given will be posted without delay on website. Any modifications of the bid documents listed in Clause 8.1, which may become necessary as a result of the pre-bid meeting or which are required in the opinion of the Employer shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.

9.2.5 Deleted

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda/corrigendum.

10.2 Any addendum thus issued shall be part of the bidding documents and shall be hosted on web site of NHAI e-tendering portal.

10.3 To give prospective bidders reasonable time to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with Clause 20.2.

C. Preparation of Bids

11. Language of Bid

11.1 All documents relating to the Bid shall be in English.

12. Documents Comprising the Bid

12.1 The e-bid submitted by the bidder shall be in two separate parts:-
Part-I - This shall be named Technical Bid and shall comprise of information submitted in section-III.
Part-II - Financial Bid shall comprise of Priced bill of quantities – to be submitted online through e-portal of NHAI.

12.2 No Documents is required to be submitted in physical form within the Bid Due Date. Only, the scanned copies of following documents is required to be uploaded during submission of e-bid on the e-tendering portal of NHAI, as per clause 12.1 above, however, following original documents in physical form shall be submitted in a sealed envelope as and when asked by the Authority and addressed to the addressee given in the NIT duly super scribed "Name of Work". Name and address of the bidder should also be indicated on the envelope.

a) Original of Bid Security Declaration.
b) Original Power of Attorney for signing the bid (whose digital signature certificate is used during e-tender submission).
c) Original Power of Attorney for lead member of the JV, if any.
d) Original joint bidding Agreement of JV, if any.
e) Original of Integrity Pact,
f) Original of experience certificates apostle at foreign origin, if any.
g) Affidavit duly notarized (as per the format provided in Section III)
h) Original experience certificate or notarised copy of certificate duly signed by authorized signatory.
i) Undertakings mentioned in Section III (Qualification Information) of this document (duly notarised).

12.3 The following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars
1	Notice Inviting Tender
2	Instruction to the bidders
3.	Conditions of Contract
4.	Contract Data
5.	Scope of work
6.	Technical Specifications
7.	Implementation Manual and Maintenance Intervention Level

13. Bid Prices

13.1 The Contract shall be for the whole Works, as described in Clause 1. 1 based on the priced Bill of Quantities submitted by the Bidder.

13.2 The bidder shall quote bid prices on appropriate format enclosed as part of tender document on e-tender portal of NHAI. Bidders will be required to quote a single percentage above/below the overall estimated amount. This percentage would be applicable for all the items of work in the contract for working out the rates for each item of work.

13.3 All duties, taxes (excluding GST), royalties and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the rates, prices, and total Bid price submitted by the Bidder. The GST shall be paid additionally @ 12% on the quoted prices on submission of proof as per NHAI extant guidelines.

13.4 The rates and prices quoted by the Bidder are subject to adjustment during the performance of the contract in accordance with the provisions of Clause 43 of the Conditions of Contract (no adjustment on any account will be admissible for contracts upto 12 month period).

14. Currencies of Bid and Payment

14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

15. Bid Validity

15.1 Bids shall remain valid for a period of **120 days** after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

16. Earnest Money / Bid Security/ Forfeiture/ Debarment

16.1 The bidder has to sign a Bid securing declaration accepting that if the bidder withdraw or modify its bid during the period of validity i.e. not less than 120 (one hundred twenty) days from the bid due date or if the bidder is awarded the contract and fail to sign the contract or to submit a performance security before the deadline defined in the request for bid documents, the bidder will be suspended for participation in the tending process for the works of NHAI for a period as decided by Authority from the bid due date of this work. The bid securing declaration shall be submitted as per the format at Section-IV (Format for Bid Securing Declaration).

16.2 Any BID not accompanied by the BID Security Declaration shall be summarily rejected by the Authority as non-responsive.

16.3 **DELETED.**

16.4 DELETED.

16.5 DELETED

16.6 DELETED

16.7 In case of non submission of bid security declaration, the bidder shall also be debarred from participation in NHAI works for a period as decided by NHAI.

17. Alternative Proposals by Bidders

17.1 Bidder shall submit offers that fully comply with the requirement of the Bidding Documents. Conditional offer or alternate offer will not be considered further in the process of evaluation and the bid will be declared non-responsive.

18. Format and Signing of Bid

18.1 The Bidder shall submit e-bid comprising of the documents as described in Clause 12 of the ITB.

18.2 DELETED.

18.3 DELETED.

D. Submission of Bids

19. Marking of Bids

19.1 DELETED.

19.2 DELETED.

19.3 DELETED.

19.4 DELETED.

19.5 **DELETED.**

20. Deadline for Submission of Bids

20.1 The Bidder shall ensure that the complete e-Bid is uploaded on NHAI e-tender portal on or before the Bid Due Date before the time specified in NIT/e-portal. The Bidder is further required to submit Documents in Physical Form as and when asked by the Authority on or before the time of submission as specified in Clause 12.2 of ITB, at the following address:-

The Chief General Manager (Tech) &
Regional Officer,
National Highways Authority of India
Synthesis Business Park,
Wing-C, 8th Floor,
New Town, Rajarhat,
Kolkata – 700 156
Telephone-033 2962 3251
e-mail ID: rokolkatta@nhai.org / rokolnhai@gmail.com

In the event of the specified date for the submission of documents in Physical form being declared a holiday for the Employer, the same will be received up to the specified time on the next working day

20.2 **The employer may extend the dead line for submission of bids by issuing an amendment in accordance with clause 10, in which case all rights an obligations of the Employer and the bidders previously subject to original deadline will then be subject to the new deadline.**

21. Late Submission of Document in Physical Form:

21.1 DELETED.

22. Modification and Withdrawal of Bids

22.1 Bidders may modify or withdraw their e-bids as directed on the e-tendering portal, before the Bid Due Date and time as prescribed in Clause 20.

22.2 **DELETED.**

22.3 No bid may be modified after the deadline for online submission of bids.

22.4 Withdrawal or modification of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 shall result debarment of the bidder.

22.5 Bidders may modify the prices of their bids before deadline of online submission of bid.

E. Bid Opening and Evaluation

23. Bid Opening

Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received (except those received late) shall be opened on the date and time mentioned .in Notice Inviting Tender (NIT). 'Financial Bid' of those bidders whose technical bid has been determined to be substantially responsive shall be opened on a subsequent date through online process of e-tendering, which will be notified to such bidders.

23.1 The Employer will open the "Technical Bid" of all the bids received (except those received late), in the presence of the bidders/bidders' representatives who choose to attend at the time, date and place specified in the **NIT**. In the event of the specified date for the submission of bids being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.1.1. DELETED

23.1.2 DELETED

23.2 The Employer at the opening as the Employer may consider appropriate, will announce the bidders' names and such other details.

23.3 The Employer will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Clause 23.1.

23.4 (i) The bids accompanied with valid bid security declaration, bid document fee will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1.

(ii) Deleted

(iii) Deleted

(iv) As soon as possible, the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration. However, to assist in the examination, evaluation of technical bids, the Employer may at his discretion, ask any bidder for clarification of his bid, however, no additional documents in support of clarification will be entertained.

23.5 The Employer shall inform the bidders, whose technical bids are found responsive, of the date, time and place of opening of the financial bids. The bidders so informed, or their representative, may attend the meeting of opening of financial bids.

23.6 At the time of the opening of the 'Financial Bid', the names of the bidders whose bids were found responsive in accordance with clause 23.5 will be announced. The financial bids of only these bidders will be opened. The responsive bidders' names, the Bid prices, the total amount of each bid, pursuant to clause 22 and such other details as the Employer may consider appropriate will be announced by the Employer at the time of bid opening. Any Bid price, which is not read out and recorded, will not be taken into account in Bid Evaluation.

23.7 The Employer shall prepare the minutes of the opening of the Financial Bids.

24. Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid**.**

25. Clarification of Bids and Contacting the Employer

25.1. To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his-Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 27.

25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

25.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

26. Examination of Bids and Determination of Responsiveness

26.1 During the detailed evaluation of "Technical Bids", the Employer will determine whether each Bid

(a) meets the eligibility criteria defined in Clauses 3 and 4;
(b) DELETED; and
(c) is substantially responsive to the requirements of the Bidding Documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications and drawings etc.

26.2 DELETED.

26.3 DELETED.

27. Correction of Errors.
27.1 Financial bids determined to be substantially responsive will be checked by the Employer for any Arithmetic errors. Errors will be corrected by the employer as follows:

a) Where there is a discrepancy between the rates in figures and words, the rate in words will govern.

27.2 The amount stated in the financial bid will be corrected by the employer in accordance with the above procedure for the correction of errors and shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount the bid will be rejected, and the bidder shall be debarred in accordance with the sub clause 16.7.

28. Evaluation and Comparison of Financial Bids

28.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26.

28.2 In evaluating the Bids, the Employer will determine for each bid the evaluated bid price by adjusting the Bid price after making any correction for errors pursuant to Clause 27.

28.3 DELETED.

29. Price Preference

29.1 Deleted

F. Award of Contract

30. Award Criteria

30.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined:

i. to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price.

ii. Deleted.

31. Employer's Right to Accept any Bid and to Reject any or all Bids

31.1 Notwithstanding Clause 30, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

32. Notification of Award and Signing of Agreement.

32.1 The bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay to the Contractor in consideration of the execution, completion and maintenance of the Works, and of routine maintenance of roads by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

32.2. The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 33.

32.3. The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and the successful Bidder after the performance security is furnished.

32.4 Upon furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

33. Performance Security

33.1 Within 10 (ten) days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security of 3 (Three) percent of the Contract Price, valid for the period of 28 days after the expiry of defect liability period and sign the contract.

33.2 The performance security shall be either in the form of a Bank Guarantee or fixed deposit Receipts, in the name of the Employer, from a Bank as specified under:-

A. Bank Guarantee or Bank FDR receipts, in the name of the Employer, from following banks would be accepted:-
   i. State Bank of India or its subsidiaries,
   ii. Any Indian Nationalised Bank
   iii. IDBI / ICICI Bank
   iv. A Foreign Bank (issued by a branch outside India) with a counter guarantee from SBI or its subsidiaries or any Indian Nationalised Bank.

   Any Scheduled Commercial Bank approved by RBI having a net worth of not less than Rs. 500 crores as per the latest Annual Report of the Bank. In the case of a Foreign Bank (issued by a branch in India), the net worth in respect of the Indian operations shall only be taken into account.

B. The acceptance of the guarantees shall also be subject to the following conditions:-

   i. The capital adequacy of the Bank shall not be less than the norms prescribed by RBI (presently 9, with effect from 31st March, 2003,).

   ii. The bank guarantee issued by a Cooperative Bank shall not be accepted.

33.3 Failure of the successful bidder to comply with the requirement of sub-clause 33.1 shall constitute sufficient ground for cancellation of the award and debarment for a period as specified in clause 16.7.

34. Advances

34.1 The Employer will provide Mobilization Advance as provided in Part I General Conditions of Contract.

35. Corrupt or Fraudulent Practices

The Employer will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time to bid for any work with National Highways Authority of India, if it at any time determines that the Firm has engaged in corrupt or fraudulent practices in competing for the Contract for in its execution.

For the purpose of this clause, the following terms shall have the meaning hereinafter respectively assigned to them

(a) **" Corrupt practice"** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (For avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with Bidding Process, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process);

(b) **"Fraudulent practice"** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process; The Employer requires the bidders/Contractors to strictly observe the laws against fraud and corruption enforced in India, namely, Prevention of
Corruption Act, 1988.

Appendix to ITB

(4.4. **B**) (b)(i) The key equipment to be deployed on contract work.

Name of the Equipment	**Quantity**	**Max. Age (in years)**
Patrol Vehicle	one vehicle/50 km	**2**
Ambulance	one vehicle/50 km.	**2**
Crane of 30 Tonne Capacity.	one vehicle/50 km	**2**
Mechanical Broom with VTS	1	**2**
Water Tanker (5000 litre capacity) Tractor Trolley / Truck mounted	1	**5**
Static Roller	2	**5**
Mobile Road Repair and Patching Machine	1	**5**
Batch type hot mix plant (100-120 ton per hr.)	1	**5**
Paver finisher	1	**5**
Bitumen Brouser	1	**5**
Pneumatic wheeled Roller	1	**5**
Dumper	5	**5**
Tractor with Trolley	1	**5**
Mechanical Hydraulic Broomer	1	**5**
Air Compressor	1	**5**
JCB	1	**5**
Milling Machine	1	**5**

Note: The bidder must produce the documentary evidence in support of his owning/ leased/ rented of the above equipment. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipment with the company/ entity from whom the equipment are proposed to be hired on lease/ rent.

4.4 B (b) (ii) The Number of Technical Personnel, Qualifications and Experience will be as follows:

Sl. No	**Personnel**	**Qualification**	**Particular Experience (minimum requirement)**	**No. of Persons**
1	Project Manager	Graduation in Civil Engineering + 5 Years Exp.	5years as Project Manager on NH/SH, bridge construction/ Maintenance works	1
2.	Site Engineer cum Quantity Surveyor cum Material Engineer	Diploma in Civil Engineering + 5 years Exp. Or Graduation in Civil Engineering + 3 yrs. Exp.	5 years on highway construction /Maintenance works	1
3.	Incident cum Road Property Manager cum Route Operation Manager	Graduate from a recognized University + 5 years experience	3 years on highway property management & maintenance	1
			Total	**3**

Note: The detailed signed and scanned CV's of the Key Technical Personnel at S. No. 1, signed by the key personnel himself, must be uploaded along with the bid. The name and educational qualification of other personnel should be given. Non compliance of the above or non furnishing of the CV as above or conditional deployment of any of the above personnel or proposal to employ lesser number of personnel than above shall make the bid non responsive and financial bid shall not be opened.

Format of Curriculum Vitae (CV) For Proposed Key Staff

PHOTO

1. Proposed Position:_____

2. Name of Staff: _____

3. Date of Birth: _____ **(Please furnish proof of age)**

4. Nationality: _____

5. Educational Qualification:
(*Summarize college/university and other specialized education of staff member, giving names of schools, dates attended and degrees obtained).*
(Please furnish proof of qualification)
Contact Address with Phone and mobile numbers:

6. Membership of Professional Societies: _____

7. Publication:
(List of details of major technical reports/papers published in recognized national and international journals)

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

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

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

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

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

Certification:

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

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

Signature of the Candidate _____

Place _____

Date _____

Signature of the Authorized Representative of the firm_____

Place _____

Date _____

Note: Each page of the CV shall be signed in ink by both the staff member and the Authorized Representative of the firm.

SECTION III

QUALIFICATION INFORMATION

(To be Filled by Bidder)

The information to be filled in by the Bidder in this section & document submitted in physical form will be used for the purposes of post qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract.

Qualification Information

1. For Individual Bidders

1.1 (a) Year of Constitution

(b) legal status of Bidder (Proprietorship/Partnership or Pvt. Ltd. firm)

[Upload scanned copy of original]

(c) Place of registration: _____

(d) Principal place of business: _____

1.2 Power of attorney of signatory of Bid *[Upload scanned copy & also supply Original copy as and when asked to submit by the Authority]*

1.3. Total value of Civil Engineering construction
work performed in the last three years (in Rs. Lakhs)
refer ITB Clause 4.4 A (a)
(Upload scanned copies of certificate from Chartered Accountant & also supply original certificate from Chartered Accountant as and when asked to submit by the Authority)

2018-2019----------
2019-2020----------
2020-2021_____
Total ----------

Average per year

1.4 (a) Work performed as prime contractor, work performed in the past as a nominated sub-contractor provided further that all other qualification criteria are satisfied (in the same name) of a similar nature during the last seven years as per ITB Clause 4.4A(b).

Project Name	Name of the Employer*	Description of work **(**Mention Lane Configuration)**	Contract No.	Value of Contract (Rs. Crore)	Date of issue of work order	Stipulated period of completion	Actual date of completion*	Remarks explaining reasons for delay & work Completed

** Upload certificate(s) from the Employer (to be given by an officer at the rank of Executive Engineer or equivalent)*

Note: In case of nominated sub-contractor – a certificate from the Executive Engineer or equivalent of the Prime Employer should be obtained from whom an approval for subcontractor has been obtained.

1.4 (b) Information on Bid Capacity (works for which bids have been submitted and accepted and works which are yet to be completed) as on the date 7 days before the last date for bid submission (as per Cl 4.6 of the ITB).

(i) Existing commitments and on-going works (B)

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs Cr)	Stipulated Period of Completion	Value of works* remaining to be completed (Rs Cr)	Escalation factor	Anticipated date of completion	Escalated value of remaining work during completion period of work for which bids are invited
1	2	3	4	5	6	7	8	9	10

* Upload certificate (s) from the Engineer(s)-in-Charge of the rank of Executive Engineer or equivalent.

(ii) Details of works for which bid submitted and accepted (i.e. where contract signing is pending)

Description of works	Place & State	Name & Address of Employer	Date of issue of Letter of Acceptance (LOA) *	Value given in LOA	Stipulated period for completion	Value of work during completion period of work for which bids are invited
1	2	3	4	5	6	7

* Upload copy of LOA

(iii) Bid Capacity (Bidder shall calculate, mention his bid capacity and enclose the supporting calculation)

A = Rs. ……lakh (enclose the details)

N = 3 years

B = Rs. ……lakh (enclose the details)

Assessed available bid capacity = A×N×2.5 – B
= Rs. ……. lakhs

1.5. Availability of Key Equipment essential for carrying out the Works [Ref. Clause 4.4(B)(b)(i)]. The Bidder should list all the information requested below.

Item of Equipment	Requirement		Availability Proposals			Page No of the proof attached.
	No.	Capacity	Owned/Leased rented	Nos./Capacity	Age/Condition	

Note: The bidder must upload the documentary evidence in support of his owning/leased/ rented of the above equipment. In case the bidder proposes to hire or take the above equipment on lease, he should, along with the lease/rent agreement, attach the proof of ownership of these equipment with the company/ entity from whom the equipment are proposed to be hired on lease/ rent.

1.6 Qualification and Experience of Key Personnel required for administration and execution of the Contract [Ref. Clause 4.4 (B) (b) (ii)]. **Upload biographical data for technical personnel (Refer also to Cl. 4.2 (e) of Instruction to Bidders).**

(Refer also to Sub Clause 9.1 of the Conditions of Contract).

Position	Name	Qualification	Total Professional Experience (Years)	Experience in the proposed position (Years)

Note : The detailed and signed CV's of all the Key Technical Personnel, signed by the key personnel himself, must be uploaded along with the bid as per proforma given in Appendix to ITB. Non-compliance of the above or non-furnishing of the CV as above or conditional deployment of any of the above personnel or proposal to employ lesser number of personnel than above may make the bid non responsive and financial bid may not be opened.

1.7. Information on litigation history in which the Bidder is involved.

Other Party (ies)	Employer	Cause of Dispute	Amount involved	Remarks showing Present Status

2. Bidders should upload the scanned copy of the following affidavits/ undertakings as per formats enclosed hereinafter & also send original copy of Affidavit/Undertakings as and when asked to submit the same by the Authority: -

(i) Affidavit (it should be on stamp paper attested by Notary Public)
(ii) Undertaking regarding minimum investment of cash towards working capital.
(iii) Undertaking that the Bids shall remain valid for the period specified in Clause 15.1. of the ITB.

AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the enclosed attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s_____ have abandoned any work on National Highways in India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorise(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by NHAI to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the NHAI and within the prescribed time.

_____

(Signed by an Authorised Representative of the Firm)

_____

Name of the Representative

_____

Name of Firm

_____

DATE

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s _____ _____ would invest a minimum cash up to 25% of the value of the work during implementation of the Contract towards the working capital.

_____
(Signed by an Authorised Representative of the Firm)

_____
Name of the Representative

_____
Name of Firm

_____
DATE

Note: It should not be later than one month before bid due date.

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s _____agree to abide by this bid for a period of _____ days after the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

_____
(Signed by an Authorised Representative of the Firm)

_____
Name of the Representative

_____
Name of Firm

_____
DATE

(On the letter head of the bidder)

Appendix – 1.7 [Ref. Clause 4.4.B(b)(i)]

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s _____agree to provide and will deploy required equipment as mentioned in the appendix to ITB of the work_____.

Further it is certified that the documents submitted as an evidence of availability of the key equipments for this work as stated in the Appendix to ITB, are genuine and correct. If anything contrary to this details as submitted is found at any state NHAI would be at liberty to debar/blacklist my firm for an appropriate period s decided by NHAI.

_____

(Signed by an Authorised Representative of the Firm)

_____

Name of the Representative

_____

(Seal of the Company) Name of Firm

_____

DATE

Note : It should not be later than one month before bid due date.

(SECTION-IV)

FORMS OF BANK GUARANTEES LOA & AGREEMENT

BID SECURITY DECLARATION

I hereby submit a declaration that the bid submitted by the undersigned, on behalf of the bidder, [Name of the bidder], either sole or in JV, shall not be withdrawn or modified during the period of validity i.e. not less than 180 (one hundred eighty) days from the bid due date.

I, on behalf of the bidder, [Name of the bidder], also accept the fact that in case the bid is
withdrawn or modified during the period of its validity or if we fail to sign the contract in case the work is awarded to us or we fail to submit a performance security before the deadline defined in clause 1.3 of the Request for Proposal (RFP), then [Name of the bidder] will be suspended for participation in the tendering process for the work of NHAI for a period of 1 (One) Year from the bid due date of this work.

For _____ [Name of the Bidder]

(Signature, name & Designation of the Authorised Signatory]

(Official Seal)

Date:

Place:

FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY

To
The Chairman
National Highways Authority of India
G5 & 6, Sector – 10, Dwarka,
New Delhi – 110075

WHEREAS…… (name and address of contractor) hereinafter called "the contractor" has undertaken, in pursuance of Letter of Acceptance No. ……. Dated …….. to execute…….. (name of Contract and brief description of Works)
(hereinafter called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you with a Bank Guarantee for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREOF we hereby affirm that we are the guarantor and responsible to you on behalf of the Contractor, up to a total of Rs…… (amount of guarantee) (Rupees…….. (in words), 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 aforesaid without your needing to 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 Contractor 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 works to be performed there under or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the date of expiry of the Defects Liability Period.

This guarantee shall also be operatable at our ……..….. branch at Kolkata, 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

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 NHAI after obtaining details thereof from NHAI.

Sr no	Particulars	Details
1	Name of Beneficiary	National Highways Authority of India
2	Beneficiary Bank Account	95911010007131
3	Beneficiary Bank Name	Canara Bank
4	IFSC Code	CNRB0019525

The liability of Bank under this Guarantee shall not be affected by any change in the constitution of the contractor or of the Bank.

Notwithstanding anything contained herein before, our liability under this guarantee is restricted to Rs. _____ (Rs._____in words) and the guarantee shall remain valid till _____. Unless a claim or a demand in writing is served upon us on or before _____ all our liability under this guarantee shall cease.

Signature and seal of the Guarantor with Name, Designation, Employee Code Number & Telephone Number……

Name of the Issuing Bank/ Branch ……Name of the Controlling Branch/Bank…..

Address & Telephone Number……Address & Telephone Number…….
Date……..

In the presence of (if this is to be witnessed as per bank's policy)……

1……
(Name, Address & Occupation)

2……
(Name, Address & Occupation)

An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract including additional security for unbalance bids, if any and denominated in Indian Rupees.

FORM OF LETTER OF APPLICATION

To,
The Chief General Manager (T)
National Highways Authority of India
Regional Officer-Kolkata, Synthesis Business Park
Rajarhat, Newtown, Action Area-II
Kolkata – 700 156

DESCRIPTION OF WORKS : Short Term Improvement and Routine Maintenance of Palsit to Dankuni (Km. 584.929 to Km. 651.576) Section of NH - 19 (Old NH - 2) in the state of West Bengal [Contract Package no. O&M/ NH-2/2020-21/Palsit-Dankuni]

Dear Sir,

Having examined the Bid Document, Instruction to Bidders Qualification Information, Scope of works, etc. for the subject work. We, hereby submit our bid for the subject work.

It is certified that the information furnished in this document is true and correct. The proposal is unconditional and unqualified. We undersigned accept that NHAI reserves the right to reject any or all application without assigning any reason.

Thanking you,

Yours faithfully,

(Authorized Signatory)
for and on behalf of M/s_____

FORM OF LETTER OF ACCEPTANCE

No. …….. Dated ……..

To

M/s……

Sub.: …….. Name of Work ……

Sir,

Based on your bid submitted on …….. in compliance of bidding document of NHAI for execution of the work of ……. , it is hereby notified that your bid for a contract price of **Rs……** (**Rupees in words……)** has been accepted for and on behalf of NHAI

You are hereby requested to furnish Performance Security plus additional security in the form detailed in para. 33.2 of ITB for an amount equivalent to **Rs……** (**Rupees in words……)** within 10 days as per provisions of clause 33.1 of ITB of the bid document and sign the contract agreement failing which the actions as stipulated in clause-.33.3 of ITB shall be taken.

Thanking you,

Yours faithfully,

(……..)
Regional Officer-Kolkata
NHAI

FORM OF AGREEMENT

AGREEMENT

This agreement made the _____day of _____ 2022 _____ between the **National Highways Authority of India, Regional Office-Kolkata, West Bengal** (hereinafter called "the Employer" of the one part and _____ (here in after called "the Contractor") of the other part.

AND WHEREAS the Employer invited bids from eligible bidders for the execution of certain works, viz……

AND WHEREAS pursuant to the bid submitted by the Contractor, vide _____ (here in after referred to as the "BID" or "ÖFFER") for the execution of works, the Employer by his letter of acceptance dated _____ accepted the offer submitted by the Contractor for the execution and completion of such works and remedying of any defects thereon, on terms and conditions in accordance with the documents listed in para 2 below.

AND WHEREAS the Contractor by a deed of undertaking dated _____ has agreed to abide by all the terms of the bid, including but not limited to the amount quoted for the execution of Contract, as stated in the bid, and also to comply with such terms and conditions as may be required from time to time.

AND WHEREAS the contractor has agreed to undertake such works and has furnished a performance security pursuant to clause 33 of the instructions to bidders (Section-I).

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the conditions of contract hereinafter referred to;
2. the following documents shall be deemed to form and be read and construed as part of this agreement viz.

    (a) Agreement,
    (b) Letter of Acceptance
    (c) Contractor's Bid,
    (d) Contract Data,
    (e) Conditions of Contract
    (f) Technical Specifications,
    (g) Drawings, if any
    (h) Implementation Manual and Maintenance Intervention Level
    (i) Scope of Work
    (j) Bill of Quantities, and
    (k) Any other document listed in the Contract Data.

3. The foregoing documents shall be construed as complementary and mutually explanatory one with another. Should any ambiguity or discrepancy be noted then the order of precedence of these documents shall be subject to the order as listed above and interpreted in the above order of priority.
4. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute

and complete the works and remedy any defects therein in conformity in all respects with the provisions of the contract.

5. the employer hereby covenants to pay the contractor in consideration of the execution and completion of the works and remedying of defects therein, the contract price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS WHEREOF the parties here to have caused this agreement to be executed the day and year above written. Signed, sealed and delivered by the said Employer through his Authorized Representative and the said Contractor through his Power of Attorney holder.

Binding Signature of Employer _____

For and on behalf of National Highways Authority of India, New Delhi – 110 075

Binding Signature of Contractor _____

For and on behalf of M/s. _____

In the presence of

1. Name :
   Address:

2. Name :
   Address:

In the Presence of

1. Name:
   Address:

2. Name:
   Address:

(SECTION-V)

CONDITIONS OF CONTRACT

AND CONTRACT DATA

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Section V
Conditions of Contract

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 41 hereunder.

The Completion Date is the date of completion of the Works as certified by the Engineer, in accordance with Clause 49.1.

The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.3.

The Contract Data defines the documents and other information, which comprise the Contract.

The Contractor is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer and includes technical and financial bids.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The Defects Liability Certificate is the certificate issued by Engineer, after the Defect Liability Period has ended and upon correction of Defects by the Contractor.

The Defects Liability Period is the period named in contact data and calculated from the Completion Date.

Drawings include calculations and other information provided or approved by the Engineer for the execution of the Contract.

The Employer is the party as defined in the Contract Data, who employs the Contractor to carry out the Works. The Employer may delegate any or all of its functions to a person or body nominated by him for specified functions.

The Engineer is the person named in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the

Engineer) who is responsible for supervising the execution of the Works and administering the Contract.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time after the approval from Employer.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

Plant is any integral part of the Works that shall have a mechanical, electrical, electronic, chemical, or biological function.

The Site is the area defined as such in the Contract Data.

Site Investigation Reports are those that were included in the bidding documents and are factual interpretative reports about the surface and subsurface conditions at the Site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.

The Start Date is given in the Contract Data. It is the date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A **Sub-Contractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer after the approval from NHAI, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install, maintain, and handover to the Employer, as defined in the Contract Data.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about these Conditions of Contract**.**

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any

Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following order of priority.

(a) Agreement,
(b) Letter of Acceptance
(c) Contractor's Bid including Financial Bid Form,
(d) Contract Data,
(e) Conditions of Contract
(f) Technical Specifications,
(g) Drawings, if any
(h) Implementation Manual and Maintenance Intervention Level
(i) Scope of Work
(j) Bill of Quantities, and
(k) Any other document listed in the Contract Data.

3. Language and Law

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4. Engineer's Decisions

4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. Delegation

5.1 The Engineer, duly informing the Employer, may delegate any of his duties and responsibilities to other people except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

7.1 The Contractor may subcontract any portion of work, up to a limit specified in Contract Data, with the prior approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations.

7.2 The Contractor shall not be required to obtain any consent from the Employer for:

a. the sub-contracting of any part of the Works for which the Sub-Contractor is named in the Contract;
b. the provision of labour or labour component.
c. the purchase of Materials which are in accordance with the standards specified in the Contract.

7.3 Beyond what has been stated in clauses 7.1 and 7.2, if the Contractor proposes sub-contracting of any part of the work during execution of the Works, because of some unforeseen circumstances to enable him to complete the Works as per terms of the Contract, the Employer will consider the following before according approval:

a) The Contractor shall not sub-contract the Works more than the limit specified in Contract Data..
b) The Contractor shall not sub-contract any part of the Work without prior consent of the Employer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any of his sub- Contractor, his agents or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents and workmen.

7.3 The Engineer should satisfy himself before recommending to the Employer whether

a) the circumstances warrant such sub-contracting; and
b) the sub-Contractor so proposed for the Work possess the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be subcontracted.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

8.2 The Contractor should take up the works in convenient reaches as decided by the Engineer to ensure there is least hindrance to the smooth flow of traffic including movement of vehicles and equipment of other Contractors till the completion of the Works.

9. Personnel

9.1 The Contractor shall employ the technical personnel named in the Contract Data. The RO, NHAI will approve any proposed replacement of technical personnel (except Project Manager) only if their relevant qualifications and experience are substantially equal to or better than those of the personnel stated in the Contract Data. If the personnel stated in the contract data are not deployed on site by the contractor, a penalty of Rs. 50,000/- per month in case of Project Manager and Rs. 25,000/- in case of other key personnel will be imposed upto a maximum period of 3 months. Thereafter, it will be treated as a breach of contract and action will be taken as per clause 53. The replacement of Project Manager will be approved by NHAI, HQ.

9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Works in the Contract.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), natural calamities and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

12. Contractor's Risks

12.1 All risks of loss of or damage to physical property and of personal injury and death, which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Insurance

13.1 The Contractor at his cost shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of defect liability period for events (a) to (d), in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

a) loss of or damage to the Works, Plant and Materials;
b) loss of or damage to Equipment;
c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
d) Personal injury or death.

13.2 Insurance policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in Indian Rupees to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be debt due.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.
13.4 Both parties shall comply with any conditions of the insurance policies.

14. Site Investigation Reports

14.1 The Contractor, in preparing the Bid, may rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

15. Queries about the Contract Data

15.1 The CGM (Tech) will clarify queries on the Contract Data.

16. Contractor to Construct the Works & do maintenance

16.1 The Contractor shall construct, install and maintain the Works in accordance with the documents forming part of the contract.

17. The Works to Be Completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18. Approval by the Engineer

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with specifications and drawings.

18.2 The Contractor shall be responsible for design of Temporary Works.

18.3 The Engineer's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give complete possession of the Site to the Contractor on the date of signing of agreement.

22. Access to the Site

22.1 The Contractor shall allow access to the Site and to any place where work in connection with the Contract is being carried out, or is intended to be carried out and to any place where material or plant are being manufactured /fabricated /assembled for the works to the engineer and any person/persons/agency authorized by:

a. The Engineer
b. The Employer

23. Instructions

23.1 The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by Auditors appointed by the Employer if so required by the Employer.

24. Deleted

25. ARBITRATION

25.1 in case of dispute or difference arising between the Employer and a Contractor relating to any matter arising out of or connected with this agreement, such disputes or differences shall be settled as set forth below:

(i) The Dispute shall be finally referred to Society for Affordable Resolution of Disputes (hereinafter called as SAROD), a Society registered under Society's Act, 1860 vide Registration no. S/RS/SW1049/2013 duly represented by Authority and National Highways Builders Federation (NHBF). The dispute shall be dealt with in terms of Rules of SAROD. The detailed procedure for conducting Arbitration shall be governed by the Rules of SAROD and provisions of Arbitration & Conciliation Act, 1996, as amended from time to time.

The Dispute shall be governed by Substantive Law of India.

(ii) The appointment of Tribunal, Code of conduct for Arbitrators and fees and expenses of SAROD and Arbitral Tribunal shall also be governed by the Rules of SAROD as amended from time to time. The rules of SAROD are as per Annex-I.

(iii) Arbitration may be commenced during or after the Contract Period, provided that the obligations of Authority and the Contractor shall not be altered by reason of the Arbitration being conducted during the Contract Period.

(iv) The seat of Arbitration shall be New Delhi or a place selected by governing body of SAROD and the language for all documents and communications between the parties shall be English.

(v) The expenses incurred by each party in connection with the preparation, presentation, etc., of arbitral proceedings shall be shared by each party itself.

25.2 The arbitrators shall make a reasoned award (the **"Award"**). Any Award made in any arbitration held pursuant to this Clause shall be final and binding on the Parties as from the date it is made, and the Contractor and the Authority agree and undertake to carry out such Award without delay.

25.3 The Contractor and the Authority agree that an Award may be enforced against the Contractor and/or the Authority, as the case may be, and their respective assets wherever situated.

25.4 This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder.

25.5 Adjudication by Regulatory Commission or Authority

In the event of constitution of a statutory Regulatory Commission or Authority with powers to adjudicate upon disputes between the Contractor and the Authority, all Disputes arising after such constitution shall, instead of reference to arbitration under Clause 25, be adjudicated upon by such
Regulatory Commission or Authority in accordance with the Applicable Law and all references to Dispute Resolution Procedure shall be construed accordingly. For the avoidance of doubt, the Parties hereto agree that the adjudication hereunder shall not be final and binding until an appeal against such adjudication has been decided by an appellate tribunal or High Court, as the case may be, or no such appeal has been preferred within the time specified in the Applicable Law.

26 Deleted

B. Time Control

27. Programme

27.1 The Engineer shall issue the indent of work in stages specifying the time limit for the same as and when required. The Contractor shall submit to the Engineer for approval a programme within the time stipulated in the Contract Data showing the general methods, arrangements, order, and timing for all the activities in the Works, along with monthly cash flow forecasts.

27.2 An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities.

27.3 The Contractor shall submit to the Engineer for approval an updated Programme at intervals. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

27.4 The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme shall show the effect of Variations and Compensation Events.

28. Extension of the Intended Completion Date

28.1 The Engineer shall extend the Intended Completion Date only after the approval of NHAI if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining Works, which would cause the Contractor to incur additional cost.

28.2 The Engineer shall decide whether and by how much time to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new intended Completion Date.

29. Delays Ordered by the Engineer

29.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

30. Management Meetings

30.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for the remaining Works and to deal with matters raised in accordance with the early warning procedure.

30.2 The Engineer shall record the business of management meetings and provide copies of the record to those attending the meeting. The responsibility of the parties for actions to be taken shall be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all those who attended the meeting.

C. Quality Control

31. Identifying Defects

31.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are noticed. Such checking shall not absolve the contractor from its obligations and its responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work (existing work/work executed by the contractor) that the Engineer considers may have a Defect.

32. Tests

32.1 The contractor shall be solely responsible for:

a. Carrying out the mandatory tests prescribed in the technical specifications forming part of contract.
b. For the correctness of the test results, whether preformed in his laboratory or elsewhere.
c. The Authority may engage third party for testing of executed items. The payment for the same would be made by the Authority.

32.2 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work (executed by the contractor) has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect, the cost of such tests shall be borne by the Authority otherwise by the Contractor.

32.3 Subject to further condition in contract data

33. Correction of Defects noticed during the Defect Liability Period.

33.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

33.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the reasonable time specified by the Engineer's notice as per good industry practice. If any defect including shrinkage cracks, other faults appear in the work within defect liability period, the Engineer shall give Notice to the Contractor of such defects before end of defect liability period and shall extend the defect liability period as long as defects remain to be corrected.

34. Uncorrected Defects/ Incomplete Works

34.1 If the Contractor has not corrected the Defect, to the satisfaction of the Engineer, within the time specified in the Engineer's notice/indent, the Engineer will assess the cost of having the Defect corrected and get the defects rectified through some other agency and the Contractor will pay 1.2 times of this amount.

34.2 If the Contractor has not completed the work to the satisfaction of the Engineer, within the time specified in the Engineer's notice/indent, in no case exceeding one month, the Engineer will assess the cost of having the work completed and get the work completed through some other agency and the Contractor will pay this amount in addition to the damages specified as per clause 45.

D. Cost Control

35. Bill of Quantities

35.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning and maintaining works to be done by the Contractor.

35.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rates in the Bill of Quantities for each item for the work executed.

35.3 Changes in the Quantities
Deleted

36. Variations

36.1 All variations shall be included in updated programmes produced by the Contractor. The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order +/- 25% of original BOQ quantity of single BOQ item subject to maximum of +/-5% of original Contract value.

37. Payments for Variations

37.1 If rates for Variation items are specified in the Bill of Quantities, the Contractor shall carry out such work at the same rate.

37.2 If the rates for Variation are not specified in the Bill of Quantities, the Engineer shall derive the rate from similar items in the Bill of Quantities and if it cannot be derived from similar item in Bill of Quantities then the rate will be derived as per Clause 37.3.

37.3 The Contractor shall, within 14 days of the issue of order of Variation work, inform the Engineer the rate which he proposes to claim, supported by analysis of the rates. The Engineer shall assess the quotation and determine the rate based on prevailing market rates within one month of the submission of the claim by the Contractor and approval from NHAI will be taken. As far as possible, the rate analysis shall be based on the standard data book and the current schedule of rates of the district public works division.

38. Cash Flow Forecasts

38.1 When the Programme is updated, the Contractor shall provide the Engineer with an updated cash flow forecast.

39. Payment Certificates

39.1 The Contractor shall submit to the Engineer monthly statements of the value of the work executed less the cumulative amount certified previously supported with detailed measurement of the items of work executed.

39.2 The Engineer shall check the Contractor's monthly statement within 7 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question.

39.3 The value of work executed shall be determined, based on measurements by the Engineer.

39.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

39.5 The value of work executed shall also include the valuation of Variations and Compensation Events.

39.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information to rectify the mistakes with detail justification acceptable to Employer.

39.7 The final bill shall be submitted by the contractor within one month of the actual date of completion of the work; otherwise the Engineers certificate of the measurement and of the total amount payable for work accordingly shall be final and payment made accordingly within a period of sixty days.

40. Payments

40.1 Payments shall be adjusted for deductions for advance payments, security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts Engineer had certified within 7 days of the date of each certificate.

40.2 Deleted

40.3 Deleted.

41. Compensation Events

41.1 The following shall be Compensation Events unless they are caused by the Contractor:

a) The Employer modifies the Schedule of other contractors in a way which affects the work of the contractor under the Contract.
b) The Engineer orders a delay or does not issue drawings, specifications or instructions required for execution of works in reasonable time
c) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no defects.

d) The Engineer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.
e) Other contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
f) The effect on the Contractor of any of the Employer's Risks.

41.2 If a Compensation Event would prevent the Works being completed before the Intended Completion Date, the Intended Completion Date shall be extended. The Engineer shall decide whether and by how much the Intended Completion Date shall be extended after the approval of the employer.

41.3 The contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer/Employer.

42. Taxes & Currencies for payments

42.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other levies, duties, royalties, cess, toll, taxes (except GST) of Central and State Governments, local bodies and authorities that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law. The GST shall be reimbursed (if applicable) subject to production of proof of such payment by the contractor (proof should contain name of work).

42.2 All payments will be made in Indian Rupees.

43. Price Adjustment

43.1. Contract price shall be adjusted for increase or decrease in WPI for the items executed after the expiry of one year from the date of the start of the work. For every month occurring after the completion of period of one year, Engineer shall compute the variation in WPI occurring between the Reference Index date preceding the Bid date and the Reference Index date preceding the date of Invoice. No price adjustment will be applicable on the safety items such as provision of service road, improvement of junctions, provision of FOB/PUP, new Road signages, new crash barriers, new railings, construction of drains etc. as these items are required to be carried out within first year of contract agreement. It is applicable only on the route operation vehicles and other routine maintenance items which may be required as per occurrence of incidence at site.

"WPI" means the Wholesale Price Index for all commodities as published by the Ministry of Industry, GOI and shall include any index which substitutes the WPI, and any reference to WPI shall, unless the context otherwise requires, be construed as a reference to the latest monthly WPI published no later than 30 (thirty) days prior to the date of consideration hereunder.

43.2 Deleted

44. Security Deposit / Retention Money

44.1 The Employer shall retain security deposit of five percent of the amount from each payment due to the Contractor until Completion of the whole of the Works.

44.2 The security deposit/retention money and the performance security will be released to the Contractor when the Defect Liability period is over, and the Engineer has certified that the Defects, if any, notified by the Engineer to the Contractor before the end of this period have been corrected.

44.3 If the contractor so desires then the Security Deposit/retention money can be released on submission of unconditional Bank Guarantee at the following two stages:-

(a) At a point after the progress of work in financial term (gross value of work done) has reached 50% of the contract amount

(b) After the retention money has been deducted to the full value (5% of the Contract Amount).

45. Liquidated Damages

45.1 The Contractor shall pay liquidated damages to the Employer at the rate or part thereof stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor and/ or Performance Bank Guarantee. Payment of liquidated damages shall not affect the Contractor's other liabilities.

45.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting in the next payment certificate. The contractor shall not be paid interest on the over payment of liquidated damages.

46. Advance Payment

46.1 The Employer will make an interest bearing advance payment to the Contractor against provision of an Unconditional Bank Guarantee in a form and from a bank acceptable to the Employer up to 10% of Contract Value. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. The contractor shall take the above advance before 2nd running bill and thereafter the same is not payable.

46.2 The Contractor is to use the advance payment only to pay for Equipment, plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that the advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer.

46.3 The advance payment shall be repaid with interest @ SBI PLR applicable plus 2% on the date of release of mobilisation advance by deducting from payments otherwise due to the Contractor. The mobilisation advance will be recovered from third running bill upto 8th running bill in six equal installments and the interest will be recovered from ninth bill. In any case, the mobilisation advance with interest must be recovered within ten months from the date of start. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, or Liquidated damages.

47. Securities

47.1 Subject to further condition in contract data, the Performance Security equal to ten percent of the contract price shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in the form given in the Contract Data and by a prescribed bank.
The Performance Security shall be valid until a date 28 days after the expiry of Defect Liability Period The validity shall account for additional 45 days time to account for BG verification, signing of contract and start date

48 Cost of Repairs

48.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Period shall be remedied/ rectified by the Contractor at their cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

49. Completion

49.1 When the whole of the works has been completed as per the provision of the Contract, the Contractor shall request the Engineer to issue a certificate of Completion of the Works. The Engineer shall, within 14 days of the date of receipt of such request, either issue to the Contractor, with a copy to the Employer, a completion certificate, stating the date on which, the works were completed in accordance with the contract, or give instructions in writing to the contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such certificate.

50. Taking Over

50.1 The Employer shall take over the Site and the Works within seven days of the Engineer's issuing a certificate of Completion.

51. Final Account

51.1 The Contractor shall supply to the Engineer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defects Liability Certificate and certify any final payment that is due to the
Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate within 56 days of receiving the Contractor's revised account.

52. Operating and Maintenance Manual

52.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them within 28 days from date of issue of certificate of completion.

52.2 If the Contractor does not supply the Drawings and/or manuals by the stipulated date or they do not receive the Engineer's approval, the Engineer shall withhold the amount equal to Rs. 5 lakhs from payments due to the Contractor.

53. Termination/Foreclosure

53.1 The Employer may terminate the Contract if the Contractor causes a fundamental breach of the Contract.

53.2 Fundamental breaches of Contract include, but shall not be limited to, the following:

a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;
b) the Contractor is declared as bankrupt or goes into liquidation other than for approved reconstitution or amalgamation;
c) the Engineer/Employer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
d) the Contractor does not maintain a Security, which is required;
e) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in clause 45;
f) the Contractor fails to provide insurance cover as required under clause 13;
g) if the Contractor, in the judgement of the Employer, has engaged in the corrupt or fraudulent practice in competing for or in executing the Contract. For the purpose of this paragraph, **" Corrupt practice"** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (For avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with Bidding Process, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process);
h) **"Fraudulent practice"** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process; if the Contractor has not completed at least thirty percent of the value of Work required to be completed after half of the completion period has elapsed;
i) if the Contractor fails to set up a field laboratory with the prescribed equipment, within the period specified; and
j) any other fundamental breach as specified in the Contract Data.

53.3 Without prejudice to any other right or remedies which the Employer may have under this contract, upon occurrence of a Contractor's fundamental breach of contract, the Employer shall be entitled to terminate this contract by issuing a Termination Notice to the Contractor ; provided that before issuing the Termination Notice, the Employer shall by a Notice inform the Contractor of its intention to issue such Termination Notice and grant 15 days to the Contractor to make a representation, and may after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the Termination Notice.

53.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

53.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible but in no case later than 7 days.

53.6 Foreclosure- NHAI may foreclose the contract before the expiry of the scheduled contract period on account of taking up the stretch for future development such as 6-laning or OMT of the highway or any such administrative decision by giving three months Notice.

54. Payment upon Termination / Foreclosure

54.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer and Employer may recover the same from Performance Bank Guarantee.
In case of foreclosure of contract on account of proposed future development of the highway or otherwise, as specified in Clause 53.6, within a period of 18 months from the date of start of contract, the Engineer shall issue a certificate for the value of work done till foreclosure and balance value of work left out. The agency shall be compensated 10% of the balance value of work left out beyond the Notice period, of the original contract amount, so certified by the Engineer and necessary deductions of income tax and other statutory taxes as applicable at that time will be made and the agency will not have any claim whatsoever on this account". In case, contract is foreclosed after the expiry of 18 months no such compensation will be admissible.

55. Property

55.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer for use for completing balance work if the Contract is terminated because of the Contractor's fundamental breach of contract.

56. Release from Performance

56.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

F. Other Conditions of Contract

57. Labour

57.1 The Contractor shall, make arrangements of his own cost and expenses for the engagement of all staff and labour, local or others; for their payment, housing, feeding and transport; and for compliance with various labour laws/ regulations.

57.2 The Contractor shall, as asked by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the

numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

58. COMPLIANCE WITH LABOUR REGULATIONS

58.1 During the currency of the Contract, the Contractor and his sub-Contractors shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be notified already or that may be notified under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The
Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor including from his performance security/ retention money. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer. The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

58.2 SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

a) **Workmen Compensation Act 1923**: - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
b) **Payment of Gratuity Act 1972**: - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed the prescribed minimum years (say, five years) of service or more or on death the rate of prescribed minimum days' (say, 15 days) wages for every completed year of service. The Act is applicable to all establishments employing the prescribed minimum number (say, 10) or more employees.
c) **Employees P.F. and Miscellaneous Provision Act 1952**: The Act Provides for monthly contributions by the Employer plus workers at the rate prescribed (say, 10% or 8.33%). The benefits payable under the Act are:
   i. Pension or family pension on retirement or death as the case may be.
   ii. Deposit linked insurance on the death in harness of the worker.
   iii. Payment of P.F. accumulation on retirement/death etc.
d) **Maternity Benefit Act 1951**: - The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
e) **Contract Labour (Regulation & Abolition) Act 1970**: - The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ prescribed minimum (say 20) or more contract labour.

f) **Minimum Wages Act 1948**: - The Employer is to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of buildings, roads, runways are scheduled employment.

g) **Payment of Wages Act 1936: -** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.

h) **Equal Remuneration Act 1979**: - The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against female employees in the matters of transfers, training and promotions etc.

i) **Payment of Bonus Act 1965**: - The Act is applicable to all establishments employing prescribed minimum (say, 20) or more workmen. The Act provides for payments of annual bonus within the prescribed range of percentage of wages to employees drawing up to the prescribed amount of wages, calculated in the prescribed manner. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. States may have different number of employment size.

j) **Industrial Disputes Act 1947**: - The Act lays down the machinery and procedure for resolution of industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

k) **Industrial Employment (Standing Orders) Act 1946**: - It is applicable to all establishments employing prescribed minimum (say, 100, or 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get these certified by the designated Authority.

l) **Trade Unions Act 1926**: - The Act lays down the procedure for registration of trade unions of workmen and Employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

m) **Child Labour (Prohibition & Regulation) Act 1986**: - The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulations of employment of children in all other occupations and processes. Employment of child labour is prohibited in building and construction industry.

n) **Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act 1979**: - The Act is applicable to an establishment which employs prescribed minimum (say, five) or more interstate migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as Housing, Medical-Aid, Travelling expenses from home up to the establishment and back etc.

o) **The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996** and **the Cess Act of 1996**: - All the establishments who carry on any building or other construction work and employs the prescribed minimum (say, 10) or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as canteens, first-aid facilities, ambulance, housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

p) **Factories Act 1948: -** The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours,

annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing the prescribed minimum (say, 10) persons or more with aid of power or another prescribed minimum (say, 20) or more persons without the aid of power engaged in manufacturing process.

59. Drawings and Photographs of the Works

59.1 The contractor shall do photography/videography of the site firstly before the start of the work, secondly mid-way in the execution of different stage of work and lastly after the completion of the work. No separate payment will be made to the contractor for this.
59.2 The Contractor shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Engineer in writing. No photograph of the works or any part thereof or plant employed thereon, shall be taken or permitted to be taken by the Contractor or by any of his employees or any employees of his sub-Contractors without the prior approval of the Employer in writing. No photographs/ Videography shall be published or otherwise circulated without the approval of the Employer in writing.

60. The Apprenticeship Act 1961

60.1 The Contractor shall duly comply with the provisions of the Apprenticeship Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

ANNEX-I
ARBITRATION RULES OF SAROD

Rules

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PREAMBLE

In order to seek speedy, affordable, just and reasonable Redressal of Dispute/Differences between NHAI and Concessionaire/Contractor arising out of and during the course of execution of various contracts, a Society for Affordable Redressal of Disputes (SAROD) has been formed as a Society under Societies Registration Act, 1860 with registration No.S/RS/SW/l044/2013. It has been formed by National Highways Authority of India (NHAI) and National Highways Builders Federation (NHBF) with founding members as mentioned in the Memorandum of Association of SAROD.

SAROD ARBITRATION RULES

Rule 1 - Scope of Application

1.1 Where any agreement, submission or reference provides for arbitration at the Society for Affordable Redressal of Disputes ("SAROD"), or under the Arbitration Rules of the SAROD and where the case is a domestic arbitration shall be conducted in accordance with the following Rules, or such Rules as amended by the SAROD where the amendments take effect before the commencement of the Arbitration. Parties may adopt following clause for inclusion in the contract:-

"Any dispute or difference whatsoever arising between the parties and of or relating to the construction, interpretation, application, meaning, scope, operation or effect of this contract or the validity or the breach thereof, shall be settled by arbitration in accordance with the rules of arbitration of the "SAROD" and the award made in pursuance thereof shall be final and binding on the parties subject to Provisions of The Arbitration and Conciliation Act, 1996".

1.2 These rules shall come into effect from the day of approval by Governing Body of SAROD.

Rule 2 - Definitions

These Rules shall be referred to as "the SAROD Arbitration Rules".

2.1 In these Rules:

"Act" means the 'Arbitration and Conciliation Act 1996' of India and any statutory modifications or re-enactments thereof.

"SAROD" means the Society for Affordable Redressal of Disputes.

"SAROD Arbitrator Panel" means the list of persons admitted to serve as arbitrators under these Rules.

"NHAI" means National Highways Authority of India.

"NHBF" means the National Highways Builders Federation.

"GOVERNING BODY" means Governing Body of SAROD as defined in Article 9 of Memorandum of Association.

"PRESIDENT" means President of Governing Body of SAROD as defined in Rules & Regulation of SAROD

"**SECRETARY**" means Secretary of SAROD as defined in Rules & Regulation of SAROD.

"TRIBUNAL" means either a Sole Arbitrator or all arbitrators when more than one is appointed.

"PARTY" means a party to an arbitration agreement,

"**E-Arbitration**" means submission of pleadings, defence statement etc by E-mail and holding of proceedings via video conferencing.

Rule 3 - Notice, Calculation of periods of Time

3.1 For the purposes of these Rules, any notice, including a notification, communication or proposal, is deemed to have been received if it is physically delivered to the addressee or if it is delivered at his habitual residence, place of business or mailing address, or, if none of these can be found after making reasonable inquiry, then at the addressee's last known residence or place of business. Notice shall be deemed to have been received on the day it is so delivered.

3.2 For the purposes of calculating a period of time under these Rules, such period shall begin to run on the day following the day when a notice, notification, communication or proposal is received. If the last day of such period is an official holiday or a non-business day at the residence or place of business of the addressee, the period is extended until the first business day which follows. Gazetted public holidays or non-business days occurring during the running of the period of time are included in calculating the period.

3.3 Without prejudice to the effectiveness of any other form of written communication, written communication may be made by fax, email or any other means of electronic transmission effected to a number, address or site of a party.

3.4 The transmission is deemed to have been received on the day of transmission.

Rule 4 - Commencement of Arbitration

4.1 Any party wishing to commence an arbitration under these Rules ("the Claimant") shall file with the Secretary and serve on the other party {"the Respondent"), a written Notice of Arbitration ("the Notice of Arbitration") which shall include the following:

a. a request that the dispute be referred to arbitration;
b. the names, addresses, telephone numbers, fax numbers and email addresses of the parties to the dispute;
c. a reference to the arbitration clause or any separate arbitration agreement that is invoked and provide a copy of the arbitration clause or arbitration agreement;
d. a reference to the contract out of which the dispute arises and provide a copy of the contract where possible;
e. a brief statement describing the nature and circumstances of the dispute;
f. the relief or remedy sought, including the amount of claim if quantifiable at the time the Notice or Arbitration is filed;
g. a proposal as to the number of arbitrators (i.e. one or three), if the parties have not previously agreed on the number; and
h. the name of the Claimant's nominated arbitrator.

4.2 A filing fee of Rs. 10,000/- (Ten thousand) or any amount decided by Governing Body from time to time is payable at the time of filing the Notice of arbitration

4.3 The date of filing of the Notice of Arbitration with the Secretary is the date of commencement of the arbitration for the purpose of these Rules.

Rule 5 – Response by Respondent

5.1 Within 14 days of receipt of the Notice of Arbitration, the Respondent shall file with the Secretary and serve upon on the Claimant, a Response including

a. A confirmation or denial of all or part of the claims;
b. Brief statement of the nature and circumstances of any envisaged counterclaims
C A comment in response to any proposals contained in the Notice of Arbitration; and

d. The name of the respondent's nominated arbitrator.

5.2 A filing fee of Rs. 10,000/- or any amount decided by Governing Body from time to time is payable at the time of filing the Response.

5.3 In case parties have objection to the jurisdiction of Arbitral Tribunal, such objection shall be raised not later than 15 days of the commencement of Arbitration proceedings failing which it will be deemed that parties have waived their right to objection.

Rule 6 – Filing of Case Statements

6.1 Within 30 days after the filing of the Notice of Arbitration, the claimant must file with the Secretary and serve on the Respondent, a Statement of Claimant's Case alongwith all documents to be relied upon by the Claimant.

6.2 Within 30 days after the service of the statement of Claimant's Case, the Respondent must file with the Secretary and serve on the Claimant, a statement of respondent's defense and counterclaim (if any) alongwith all documents to be relied upon by the Respondent.

6.3 Within 30 days after the service of the statement of Respondent's defense, if the Claimant intends to challenge anything in the statement of Respondent's defense and/or counterclaim, the Claimant must then file with the Secretary and serve on the Respondent, a statement of claimant's reply and if necessary, defense to counterclaim.

6.4 No further case statements may be filed without the leave of the Tribunal or if a Tribunal has not been appointed, the Secretary.

6.5 The Tribunal or if a Tribunal has not been appointed, the Secretary, may upon the written application of a party, extend the time limits provided under this Rule,

6.6 The party required to file a case statement must at the same time deposit with the Secretary for eventual transmission to the Tribunal an additional copy or additional copies of the case statement, according to the number of arbitrators constituting or who will constitute the Tribunal.

Rule 7 – Contents of Case Statements

7.1 The case statements must contain the detailed particulars of the party's claim, defence or counterclaim and must thus contain a comprehensive statement of the facts and contentions of law supporting the party's position.

7.2 It must:

a. Set out all items of relief or other remedies sought together with the amount of all quantifiable claims and detailed calculations.
b. State fully its reasons for denying any allegation or statement of the other party.
c. State fully its own version of events if a party intends to put forward a version of events different from that given by the other party.

7.3 A case statement must be signed by or on behalf of the party making it.

Rule 8 - Default in Filing and Serving Case Statements

8.1 If the Claimant fails within the time specified under these Rules or as may be fixed by the Tribunal or by the Secretary, to submit its Statement of Case, the Tribunal or if a Tribunal has not been appointed, the Governing Body may issue an order for the termination of the arbitral proceedings or make such other directions as may be appropriate in the circumstances.

8.2 It the Respondent fails to submit a Statement of Respondent's Defense, the Tribunal may nevertheless proceed with the arbitration and make the award.

Rule 9 - Further Written Statements

9.1 The Tribunal will decide which further written statements, in addition to the case statement(s) already filed, are required from the parties and shall fix the periods of time for giving, filing and serving such statements.

9.2 All such further statements must be given to the Tribunal, filed with the Secretary and served on the Claimant or Respondent, whichever is applicable.

Rule 10 - SAROD to Provide Assistance

10.1 At the request of the Tribunal or either party, the Secretary will render such assistance as is required for the conduct of the arbitration, including arranging for facilities, suitable accommodation for sittings of the Tribunal, secretarial assistance or interpretation of these rules.

10.2 Any additional expenses incurred or to be incurred for any such arrangements shall be borne by the parties.

Rule 11 - Appointment of Tribunal

11.1 The disputes shall be decided by a Sole Arbitrator when the total claim of dispute is Rs. 3 Crores or less.

11.2 In all cases of disputes claimed for more than Rs. 3 Crores, the tribunal shall consist of odd number of Arbitrators to be nominated by the parties. The Presiding Arbitrator shall be appointed by the Arbitrators nominated by the parties from amongst the panel maintained by SAROD. For deciding the Presiding Arbitrator, a draw of lots can be carried out from amongst the names suggested by the Arbitrators nominated by the Parties, The eligibility criteria for empanelment of Arbitrators will be decided by the Governing Body.

11.3 If a Sole Arbitrator is to be appointed, the Governing Body will appoint the Arbitrator within 21 days from the date the Respondent's Statement of Defence and Counterclaim (if any) is filed or falls due, whichever is earlier. The Governing Body will appoint the Arbitrator from the panel of Arbitrators by draw of lots,

11.4 An Arbitrator/Presiding Arbitrator to be appointed under these Rules shall be a person on the SAROD Arbitration Panel as at the date of the appointment,

11.5 In the event of any party failing to appoint Arbitrator within 30 days of receipt of the notice of Arbitration, the Governing Body shall appoint the Arbitrator or Presiding Arbitrator as the case may be by a draw of lots.

Rule 12 - Multiparty appointment of the Tribunal

12.1 If there are more than 2 parties in the arbitration, the parties shall agree on the procedure for appointing the Tribunal within 21 days of the receipt of the Notice of Arbitration.

12.2 If the parties are unable to do so, upon the lapse of the 21 day time period mentioned herein, the Tribunal shall be appointed by the Governing Body as soon as practicable.

Rule 13 - Appointment of Substitute Arbitrator

In the event of the death or resignation of any of the arbitrators, a substitute arbitrator must be appointed by the same procedure as in Rule 11 by which the arbitrator concerned was appointed, failing which, the Governing Body will make the appointment.

Rule 14 - Independence and Impartiality of the Tribunal

14.1 The Tribunal conducting arbitration under these Rules shall be and remain at all times independent and impartial, and shall not act as advocate for any party.

14.2 A prospective arbitrator shall disclose to those who approach him in connection with his possible appointment, any circumstances likely to give rise to justifiable doubts as to his impartiality or independence.

14.3 An arbitrator, once nominated or appointed, shall disclose any such circumstance referred to in Rule 14.2 to the Secretary and/ or to all parties.

Rule 15 - Code of Ethics for Arbitrators
An Arbitrator is a fountain of justice and emblem of equity, fairness and good conscience. Therefore he/she is expected to exhibit a noble conduct. The code of conduct prescribed by the Governing Body has to be adopted.

Appointment

15.1 A prospective arbitrator shall accept an appointment only if he is fully satisfied that he is able to discharge his duties without bias, he has an adequate knowledge of the language of the arbitration, and he is able to give to the arbitration the time and attention which the parties are reasonably entitled to expect,

15.2 In this code, the masculine includes the feminine.

Disclosure
15.3 A prospective arbitrator shall disclose all facts or circumstances that may give rise to justifiable doubts as to his impartiality or independence, such duty to continue thorough out the arbitral proceedings with regard to new facts and circumstances.

15.4 A prospective arbitrator shall disclose to the Secretary and any party who approaches him for a possible appointment:

(a) Any past or present close personal relationship or business relationship, whether direct or indirect, with any party to the dispute, or any representative of a party, or any person known to be a potentially important witness in the arbitration;
(b) The extent of any prior knowledge he may have of the dispute.

Bias

15.5 The criteria for assessing questions relating to bias are impartiality and independence. Partiality arises when an arbitrator favours one of the parties or where he is prejudiced in relation to the subject matter of the dispute. Dependence arises from relationships between an arbitrator and one of the parties, or with someone closely connected with one of the parties.

15.6 Any close personal relationship or current direct or indirect business relationship between an arbitrator and a party, or any representative of a party, or with a person who is known to be a potentially important witness, will normally give rise to justifiable doubts as to a prospective arbitrator's impartiality or independence. Past business relationships will only give rise to justifiable doubts if they are of such magnitude or nature as to be likely to affect a prospective arbitrator's judgment. He should decline to accept an appointment in such circumstances unless the parties agree in writing that he may proceed.

Communications

15.7 Before accepting an appointment, an arbitrator may only enquire as to the general nature of the dispute, the names of the parties and the expected time period required for the arbitration.

15.8 No arbitrator shall confer with any of the parties or their Counsel until after the Secretary gives notice of the formation of the Tribunal to the parties.

15.9 Throughout the arbitral proceedings, an arbitrator shall avoid any unilateral communications regarding the case with any party, or its representatives.

Fees

15.10 In accepting an appointment, an arbitrator agrees to the remuneration as prescribed in the rules of SAROD, and he shall make no unilateral arrangements with any of the parties or their Counsel for any additional fees or expenses without the agreement of all the parties and the consent of the Secretary of SAROD.

Conduct

15.11 Once the arbitration proceedings commence, the arbitrator shall acquaint himself with all the facts and arguments presented and all discussions relative to the proceedings so that he may properly understand the dispute.

Confidentiality

15.12 The arbitration proceedings shall remain confidential. An arbitrator is in a relationship of trust to the parties and should not, at any time, use confidential information acquired during the course of the proceedings to gain personal advantage or advantage for others, or to affect adversely the interest of another.

15.13 This Code is not intended to provide grounds for the setting aside of any award.

Rule 16 - Challenge of Arbitrators

16.1 An arbitrator may be challenged if there are circumstances that give rise to justifiable doubts as to his impartially or independence and also if he or she has committed any misconduct.

16.2 An arbitrator may also be challenged if he does not possess the qualifications required by the agreement of the parties,
16.3 A party may challenge an arbitrator appointed on its nomination or with its agreement only for reasons of which it becomes aware after the appointment has been made.

16.4 A party who intends to challenge an arbitrator shall file with the Secretary and serve on the other party or all other parties, whichever is applicable, a Notice of Challenge.

16.5 The Notice of challenge must be filed and served within 14 days from the appointment of the arbitrator or within 14 days after the circumstances mentioned in Rule 15.1 became known to that party.

16.6 The Notice of Challenge must state the reasons for the challenge.

16.7 The arbitration shall be suspended until the challenge is resolved or decided upon.

16.8 When an arbitrator has been challenged by one party, the other party may agree to the challenge. The arbitrator may also, after the challenge, withdraw from his office. However, it is not implied in either case that there has been an acceptance of the validity of the grounds for the challenge. In both cases, the procedure provided in Rule 11 read with Rule 13, shall be used for the appointment of a substitute arbitrator.

Rule 17 - Decision on Challenge

17.1 If the other party does not agree to the challenge and the arbitrator does not withdraw, the decision on the challenge will be made by the Governing Body.

17.2 If the Governing Body sustains the challenge, a substitute arbitrator shall be appointed or chosen pursuant to the procedure applicable to the appointment of an arbitrator as provided in Rule 11 read with Rule 13. If the Governing Body dismisses the challenge, the arbitrator shall continue with the arbitration.

Rule 18 - Removal of **the Tribunal**

18.1 The Governing Body may on the application of a party remove an arbitrator:

a. Who is physically or mentally incapable of conducting the proceedings or where there are justifiable doubts as to his ability to do so; or
b. Who has refused or failed to use all reasonable dispatch in conducting the arbitration or making an award.
c. Who has continuously absented from attending the proceedings for more than 3 sitting without prior permission of Presiding Arbitrator/Governing Body of SAROD.

18.2 The arbitrator(s) concerned is entitled to appear and be heard at the hearing of the application to remove him.

18.3 Upon the removal of the arbitrator, a substitute arbitrator shall be appointed in accordance with Rule 11 read with Rule 13.

18.4 The Governing Body's decision on the application is final and is not subject to appeal or review.

Rule 19 - Re-hearing in the Event of Replacement of the Tribunal
If the sole or presiding Arbitrator is replaced, there shall be a re-hearing. If any other arbitrator is replaced, such re-hearing may take place at the discretion of the Tribunal.
Rule 20 - Jurisdiction of the Tribunal

20.1 The Tribunal shall have the power to rule on its own jurisdiction, including any objection with respect to the existence, termination or validity of the arbitration agreement. For that purpose, an arbitration agreement which forms part of a contract shall be treated as an agreement independent of the other terms of the contract. A decision by the Tribunal that the contract is null and void shall not entail ipso jure the invalidity of the arbitration agreement.

20.2 The plea that the Tribunal does not have jurisdiction shall be raised not later than in the Statement of Defense. A plea that the Tribunal is exceeding the scope of its authority shall be raised promptly after the Tribunal has indicated its intention to decide on the matter alleged to be beyond the scope of its authority. In either case the Tribunal may nevertheless admit a late plea under this Rule if it considers the delay justified. A party is not precluded from raising such a plea by the fact that he has nominated, or participated in the appointment of an arbitrator.

20.3 The Tribunal must rule on an objection that it lacks jurisdiction as a preliminary question upon the objection being raised. It may rule on an objection that it exceeds the scope of its authority either as a preliminary question or in an award on the merits, as it deems just and convenient.

20.4 In addition to the jurisdiction to exercise the powers defined elsewhere in these Rules, the Tribunal shall have jurisdiction to determine any question of law arising in the arbitration; proceed with the arbitration not with sanding the failure or refusal of any party to comply with these Rules or with the Tribunal's orders or directions, or to attend any meeting or hearing, but only after giving that party written notice that it intends to do so; and to receive and take into account such written or oral evidence as it shall determine to be relevant, whether or not strictly admissible in law.

Rule 21 – Fees of SAROD and Arbitral Tribunal

Fee Schedule

Registration Fee (Non - Refundable): Rs, 10,000/- or any amount fixed by Governing Body from time to time. The Schedule of Fees and allied expenditure shall be decided by Governing Body.

Rule 22- Transmission of File to the Tribunal

22.1 The Secretary shall, as soon as practicable transmit to the Tribunal, a file containing the Notice of Arbitration, the Response and all case statements.

22.2 The Tribunal shall as soon as practicable, after consultation with the parties, issue such orders and/or directions as are necessary for the conduct of the arbitration to conclusion, including a timetable for steps to be taken in the arbitration and for the hearing of the arbitration.

Rule 23 - Judicial Seat of Arbitration

23.1 Unless otherwise agreed by the parties, the judicial seat of arbitration shall be New Delhi.

23.2 Notwithstanding Rule 22.1 and 22.2, the Tribunal may, unless otherwise agreed by the parties, hold hearings and meetings anywhere convenient, subject to the provisions of Rule 28.2.

Rule 24 - Language of Arbitration

The language of arbitrators shall be English. In case of material existing are in any other language, other than English the same has to be translated to English language.

Rule 25 - Conduct of the Proceedings

The Tribunal shall have the widest discretion allowed by the Act to ensure the just, expeditious, economical and final determination of the dispute. The proceedings shall be conducted from 10.AM to 5PM with a recess of one hour.

Rule 26 - Communication between Parties and the Tribunal

26.1 Where the Tribunal sends any written communication to one party, it shall send a copy to the other party or parties as the case may be.

26.2 Where a party sends any written communication (including Statements, expert reports or evidentiary documents) to the Tribunal, the same shall be copied to the other party or ail other parties, whichever is applicable, and show to the Tribunal that the same has been so copied.

26.3 The address of the parties for the purpose of all communications during the proceedings shall be those set out in the Notice of Arbitration, or as either party may at any time notify the Tribunal and the other party or parties, whichever is applicable.

26.4 A copy of correspondence between the parties and the Tribunal shall be sent to the Secretary.

Rule 27 - Party Representatives

Any party may be represented by legal practitioners or any other representatives, subject to such proof of authority as the Tribunal may require. The names and addresses of such representatives must be notified to the other party or parties. In case one party is represented by non-legal person, another party will also be represented by non-legal person so as to maintain natural justice.

Rule 28 - Hearings

28.1 Unless the parties have agreed on documents-only arbitration, the tribunal shall hold a hearing for the presentation of evidence by witnesses, including expert witnesses, or for oral submissions.

28.2 The Tribunal shall fix the date, time and place of any meetings and hearings in the arbitrations on the first hearing, and complete time table pertaining to all the activities of the Arbitration e.g. submission of statement of claim, reply, counter claim, reply therein, admission and denial of documents, visit/inspection of site if any. The tribunal shall stick to the time table with without any deviations unless there are unavoidable circumstances warranting such deviation which will be with the prior permission of the tribunal.

28.3 Prior to the hearing, the Tribunal may provide the Parties with matters or questions to which it wishes them to give special consideration.

28.4 In the event that a party to the proceedings without sufficient cause, fails to appear at a hearing of which the notice has been given, the Tribunal may proceed with the arbitration and may make the Award after the party present has submitted evidence to prove its case.

28.5 All meetings and hearing shall be in private unless the parties agree otherwise.

Rule 29 - Documents Only Arbitration

29.1 The Disputes may be decided without an oral hearing if it is so agreed by the parties.

29.2.1 Where the parties agree to dispense with oral hearing, the Tribunal must be promptly informed by either of the parties, as soon as is practicable. The Tribunal must also be promptly informed it, at a later stage, the parties or either of them intends to apply for an oral hearing.

29.2.2 Parties may seek discovery of documents if they are not satisfied with existence of documents annexed with statement of claim, reply and counter claim by giving self-contained request to the Tribunal justifying the necessity for such documents. Decision of tribunal shall be final and binding upon the parties.

Rule 30 - Witnesses

30.1 The Tribunal may require each party to give notice of the names and designations of the witnesses it intends to call and reasons for legal necessity of such witness.

30.2 No party shall call any expert witness without the leave of the Tribunal.

30.3 Any witness who gives evidence may be questioned by each party or its representative subject to any rulings made by the Tribunal,

30.4 A Witness may be required by the Tribunal to testify under oath or affirmation.

30.5 Subject to such order or direction which the Tribunal may make, the testimony of witness may be presented in written form, either as signed statements or by duly sworn or affirmed affidavits,

30.6 Any party may require a witness to attend an oral examination at a hearing. If the witness fails to attend, the Tribunal may place such weight on the written testimony as it thinks fit, or may exclude it altogether,

30.7 The Tribunal shall determine the admissibility, relevance, materiality and weight of the evidence given by any witness.

Rule 31 - Experts Appointed by the Tribunal

31.1 Unless otherwise agreed by the parties, the Tribunal may:

a. appoint one or more experts to report the Tribunal on specific issues;
b. require a party to give any such expert any relevant information or to produce, or to provide access to, any relevant documents, goods or property for inspection by the expert.

31.2 Unless otherwise agreed by the parties, if a party so requests or if the Tribunal deem it fit, the expert shall, after delivery of his written or oral report, participate in an oral hearing, at which the parties may question him and present expert witnesses in order to testify on the points at issue.

31.3 Rule 30.2 shall not apply to an assessor appointed by agreement of the parties, or to an expert appointed by the Tribunal to advise solely in relation to procedural matters.

Rule 32 - Rules applicable to substance of dispute- (1) Where the place of arbitration is situated in India,
32.1 In an arbitration, the arbitral tribunal shall decide the dispute submitted to arbitration in accordance with the substantive law for the time being in force in India;

Rule 33 - Closure of Hearing
33.1 The Tribunal may inquire of the parties if they have any further proof to offer or witnesses to be heard or submission to make and, if there are none, declare the hearing closed.

33.2 The Tribunal may also, in view of exceptional circumstance, reopen the hearings at any time before the award is made.

Rule 34 - Additional Powers of the Tribunal
34.1 In addition to the powers conferred by the Act, the Tribunal shall also have the power to:-

a. Allow any party, upon such terms (as to costs and otherwise) as it shall determine, to amend claims or counterclaims;
b. Extend or abbreviate any time limits provided by these Rules;
c. Conduct such enquires as may appear to the Tribunal to be necessary or expedient;
d. Order the parties to make any property or thing available for inspection
e. Order any parties to produce to the Tribunal, and to the other parties for inspection, and to supply copies of any documents or classes of documents in their possession, custody or power which the Tribunal determines to be relevant;
f. Make orders or give directions to any party for interrogatories;
g. Make orders or give directions to any party for an interim injunction or any other interim measure;
h. Make such orders or give such directions as it deems fit in so far as they are not inconsistent with the Act or any statutory re-enactment thereof or such law which is applicable or these Rules.

34.2 If the parties so agree, the Tribunal shall also have the power to add other parties (with their consent) to be joined in the arbitration and make a single Final Award determining all disputes between them.

Rule 35 - Deposits to Costs and Expenses

35.1 The Tribunal's fees and SAROD administration fees shall be ascertained in accordance with the Schedule of Fees in Force at the time of commencement of the arbitration.

35.2 The Claimant shall deposit with the SAROD half of the fees payable at the time of filing of the Statement of Case. The Respondent shall deposit with the SAROD one-half of the fees payable at the time of filing the Statement of Respondent's Defence and Counterclaim (if any).

The balance of fees payable shall be paid 60 days before the date of the final hearing or on such other date that the Secretary may direct.

35.3 Where the amount of the claim or the counterclaim is not quantifiable at the time payment is due, the Secretary will make a provisional estimate. The fees will be adjusted in the light of such information as may subsequently become available. If the arbitration is settled or disposed of without a hearing, the amount of the Tribunal's fees and SAROD administration fees shall be finally determined by the Secretary who will have regard to all the circumstances of the case, including the stage of proceedings at which the arbitration is settled or otherwise disposed of.

35.4 The Secretary may from time to time direct parties to make one or more deposit(s) towards any further expenses incurred or to be incurred on behalf of or for the benefit of the parties.

35.5 All deposit(s) shall be made to and held by the SAROD. Any interest which may accrue on such deposit(s) shall be retained by the SAROD.
35.6 If a party fails to make the payments or deposits required or directed, the Tribunal may refuse to hear the claims or counterclaims, whichever is applicable, by the non-complying party, although it may proceed to determine claims or counterclaims by any party who has complied with orders.

35.7 The parties shall remain jointly and severally liable to the SAROD for payment of all such fees and expenses until they have been paid in full even if the arbitration is abandoned, suspended or concluded, by agreement or otherwise, before the final Award is made.

Rule 36 - Decision Making by the Tribunal

36.1 Where a Tribunal has been appointed, any direction, order, decision or award of the Tribunal must be made by the whole Tribunal or a majority. If an arbitrator refuses or fails to sign the Award, the signatures of the majority shall be sufficient, provided that the reason for the omitted signature is stated.

36.2 If there is no unanimity, the same shall be made by the majority arbitrators as well as by the dissenting Arbitrator alone as if acting as a sole arbitrator.

36.3 However, in the case of a three-member Tribunal the presiding arbitrator may, after consulting the other arbitrators, make procedural rulings alone.

Rule 37 - The Award
37.1 It will be mandatory for the parties to submit written synopsis of their arguments respectively which will form part of the arbitral proceedings.

37.2 The Tribunal shall assemble at the assigned place in SAROD and shall exercise utmost secrecy and confidentiality in writing the award,

37.3 Unless the Secretary extends the time or the parties agree otherwise, the Tribunal shall make its Award in writing within 30 days from the date on which the hearings are closed and shall state the reasons upon which its award is based. The award shall contain the date and shall be signed by the arbitrator or arbitrators.

37.4 The Tribunal may make interim awards or separate awards on different issues at different times.

37.5 All Awards must be submitted by the Tribunal to the Secretary and they shall be issued through the Secretary.

37.6 The Tribunal must deliver to the Secretary number of originals of the award sufficient for the parties and for filing with the Secretary.

37.7 The Secretary shall release the award to the parties only upon receipt of sufficient deposits to cover the fees and expenses due to the Tribunal and to the SAROD.

37.8 By agreeing to have arbitration under these Rules, the parties undertake to carry out the award without delay.

37.9 Stamp duty on award shall be payable by the party in whose favor the award has been pronounced.

Rule 38 - Additional Award

38.1 Within 30 days after the receipt of the award, either party, with notice to the Secretary and the other party may request the Tribunal to make an additional award as to claims presented in the arbitral proceedings but omitted from the award.

38.2 If the Tribunal considers the request for an additional award to be justified and considers that the omission can be rectified without any further hearings or evidence, it shall notify all the parties within 7 days of the receipt of the request, that it will make and additional award, and complete
the additional award within 30 days after the receipt of the request.

Rule 39 - Correction of Awards

39.1 Within 30 days of receiving an Award, unless another period of time has been agreed upon by the parties, a party may by notice to the Secretary and the other party request the Tribunal to correct in the Award, any errors in computation, any clerical or typographical errors or any errors of similar nature.

39.2 If the Tribunal considers the request to be justified, it shall make the corrections) within 30 days of receiving the request. Any correction shall be notified in writing to the parties and shall become part of the Award.

39.3 The Tribunal may correct any error of the type referred to in Rule 37.1 on its own imitative within 30 days of the date of the Award.

Rule 40 - Settlement

40.1 If, the parties arrived at amicable settlement of the dispute during the currency proceedings, the parties shall file memo of settlement before the tribunal who shall either issue an order for the termination of the arbitral proceedings or, if requested by both parties and accepted by the Tribunal, record the settlement in the form of an arbitral award on agreed terms. The Tribunal is not obliged to give reasons for such an award,

40.2 The Parties shall:

a. Notify the Tribunal and the Secretary immediately if the arbitration is settled or otherwise terminated:

b. Make provision in any settlement for payment of all the costs of the arbitration and fees and expenses due to the SAROD and the Tribunal.

40.3 If the continuation of the arbitral proceedings becomes unnecessary or impossible for any reason not mentioned in Rule 38.1, before the award is made, the Tribunal shall inform the parties of its intention to issue an order for the termination of the proceedings. The Tribunal shall have the power to issue such an order unless party raises justifiable grounds for objection.

40.4 Copies of the order for termination of the arbitral proceedings or of the arbitral award on agreed terms, signed by the Tribunal, shall be communicated by the Tribunal to the parties through the Secretary.

Rule 41 - Interest

The Tribunal may award interest on any sum awarded at such rate as applicable in fixed deposits of Sate Bank of India in respect of such periods ending not later than the date of the award as the Tribunal considers just.

Rule 42 - Costs

42.1 The Tribunal shall specify in the final award, the costs of the arbitrations and decide which party shall bear them and in what proportion they shall be borne.

42.2 In this Rule, "costs of the arbitration" shall include:

a. The fees and expenses of the Tribunal and the administration fees of the SAROD as determined by the Secretary in accordance with the Schedule of Fees;
b. The costs of tribunal appointed experts or of other assistance rendered: and
c. All expenses which are reasonably incurred by the SAROD in connection with the arbitration.

42.3 The Tribunal has power to order in its Award, that all or part of the legal or other costs (such as legal fees and expenses, costs incurred in respect of party appointed experts etc) of one party shall be paid by the other party.

Rule 43 - Waiver

A party which is aware of non-compliance with these Rules and yet proceeds with the arbitration without promptly stating its objection in writing to such non-compliance shall be deemed to have waived its right to object.

Rule 44 - Exclusion of Liability

44.1 The Tribunal, the President, the SAROD and any of its officers, employees or agents shall not be liable to any party for any act or omission in connection with any arbitration conducted under these Rules,

44.2 After the Award as been made and the possibilities of corrections and additional Awards have lapsed or been exhausted, neither the Tribunal nor the President shall be under any obligation to make any statement to any person about any matter concerning the arbitration, and no party shall seek to make any arbitrator or the President or the SAROD and any of its officers a witness in any legal proceedings arising out of the arbitration.

Rule 45 - General Provisions

45.1 In all matters not expressly provided for in these Rules, the President, the Secretary and the Tribunal shall act in the spirit of these Rules and shall make every reasonable effort to ensure the just, expeditious and economical conclusion of the arbitration.

45.2 The Secretary may from time to time issue Practice Notes on the implementation of these Rules.

Rule 46 - Amendment to Rules

These Rules may from time to time be amended by the Governing Body of SAROD.

Contract Data

Clause Reference

Items marked "N/A" do not apply in this Contract.

1.1

1. The Employer is [Cl.1.1]
Chairman, NHAI
Address: G-5 & 6, Sector-10, Dwarka, New Delhi
Name of authorized Representative: (Will be intimated later)

2. The Engineer is: (Will be intimated later) [Cl.1.1]
Designation:
Address:

3. The Intended Completion Date for the whole of the Works is **04 months** [Cl.1.1, 17&28] from start date.

4. The Site is located at NH-2 from km 584.929 to km 651.576 of Palsit-Dankuni Section in the state of West Bengal. [Cl.1.1]

5. The Start Date shall be within 10 days after the date of issue of the Notice to proceed with the work. [Cl.1.1]

6.(a) The name and identification number of the Contract
Short term improvements and Routine Maintenance of NH-2 from km 584.929 to km 651.576 of Palsit-Dankuni Section in the state of West Bengal **[Contract Package no. O&M/NH-2/2020-21/Palsit-Dankuni]**

(b) The Work consist of "Road maintenance, Road Property management and other maintenance, safety Improvement (Engineering works), Incident management and miscellaneous works for a period of 04 months". [Cl.1.1]

3.1 (a) The law which applies to the Contract is the law of Union of India. [Cl.3.1]

(b) The language of the Contract documents is English [Cl.3.1]

7.1 The limit of subcontracting is 50% of initial contract price [Cl.7.1]

8.1 Schedule of Other Contractor – NIL

[Cl 8.1]

9.1 The Technical Personnel are: For O&M works

[Cl.9.1]

Sl. No.	Personnel	Minimum Qualification and Experience	Particular Experience (minimum requirement)	No. of Persons
1	Project Manager	Diploma In Civil Engineering + 5 Years Exp.	5years as Project Manager on NH/SH, Bridge construction/ Maintenance works	**1**
	Site Engineer cum Surveyor Engineer cum Material Engineer	Diploma in Civil Engineering + 5 years Exp. Or Degree in Civil Engineering + 3 yrs. Exp.	5 years on highway construction /Maintenance works	**1**
	Incident cum Road Property Manager cum Route Operation Manager	Graduate from a recognized University + 5 Years experience	3 years on highway property management and maintenance	**1**

13.1 Amount for insurance are : [Cl.13.1]

a) Rupees equivalent to Contract price.
b) Rupees equivalent to 5% of Contract price.

c) Rupees equivalent to 5% of contract price
d) Rupees 20 lakhs for multiple incidents.

And deductible as per premium rate.

14.1 Site Investigation Report – NIL [Cl 14.1]

27.1. (A) The period for submission of the programme for approval of Engineer shall be 30 days from the issue of Letter of Commencement. [Cl.27.1]

(B). (a) Identified indented work

(1) Weekly Indent, Monthly Indent, Quarterly Indent and Bi-annual Indent 3 days before start of week; 7 days before start of month, 15 days before start of quarter and 28 days before biannual period concerned.

(2) Emergent Indents – Within 24 hours

27.3 Amount to be withheld for delays in submission of updated programme: 1% of value of work corresponding to the updated programme.

32 The period for setting up a field laboratory with the prescribed equipment relevant to items of work in BOQ is 30 days from the days from the date of notice to start work

33 The Defect Liability Period will be **0 months** from the Date of Completion.

45.1	**(a)** Amount of liquidated damages for delay in completion of works	For identified Indented work 0.1 percent of the Indented value off to the nearest thousand, per day with the minimum of Rs. 10000/- per day
	(b) Maximum limit of liquidated damages for delay in completion of work	10 per cent of the Initial Contract Price rounded off to the nearest thousand

[Cl.45.1]

47.1. The standard form of Performance Security acceptable to the Employer Shall be an unconditional Bank Guarantee of the type as specified in the Bidding Documents.

[Cl. 47.1]

53.2 **(j)** Other fundamental breach is that the contractor has failed to complete 75% of value of indented work in any 3 indents issued by the Engineer.

[Cl 53.2 (j)]

54.1. The percentage to apply to the value of work not completed representing the Employer's additional cost for completing the work shall be 20%.

[Cl.54.1]

(SECTION-VI)
SCOPE OF WORK

SCOPE OF WORK

6.1 General (in case of O&M work)

- **Road maintenance –** this includes emergency; routine, periodic (if required) and disaster maintenance. Broadly routine maintenance will include maintenance of shoulders and slopes, side drains, CD works, carriageway and crust.

- **Road property management** – Identification of encroachments and ribbon development, enforcement of regulations, Liasoning with the relevant authorities for above including procurement of land records with ownership as per mutation from the concerned Revenue Authorities and help in mutation, if required and maintenance of road signs and road furniture, demarcation of ROW with Boundary Pillars etc.

- **Incident management** - road patrols and surveillance, first aid, basic automobile assistance, tow away cranes, wireless/mobile facility and road safety works.

- Safety Improvement (**Engineering Works)** – Pavement Overlay, renewal of pavement marking, Repairing/ Providing Crash Barriers, Guard Rails management of access, provision of new sign boards, cats eyes, provision of FoB/PuP, Junction improvement, Rumble strips on cross roads, blinkers, refugee lanes, high mast light, cross bars, footpath, side drains etc.

- **Inspections**

6.2 Road Maintenance

The Contractor shall be required to perform all routine road maintenance activities along the project roads. The Contractor shall be required to submit Maintenance Report for each component of the works.

The Contractor shall be required to utilise mechanised equipment and methods to perform these obligations.

All maintenance activities shall be carried out in accordance with relevant specifications and IRC codes prescribed in the contract. The requisite quality control tests as per specifications and codes are to be carried out by the Contractor at his cost as per directions of the Engineer.

Routine road maintenance means planned works and activities required to ensure public safety, repair small defects and to maintain the road in the required condition. Ad hoc maintenance means carrying out of unscheduled maintenance occasioned by irregular events such as accidents, natural calamities, abnormal weather conditions and the like.
The routine and ad hoc Road Maintenance shall include, amongst others, activities such as:

- Repairing Local Potholes
- Crack Sealing
- Asphalt Treatment
- Road Sign Maintenance
- Road Markings
- Guard Rail and supplementary road furniture repairs

- Maintenance of Rigid Pavements
- Repair of Fences
- Repairs of Accident Damaged Assets
- Maintenance of Culverts, Drains and Channels
- Clearing of Litter and Debris from roads and structures
- Periodic Maintenance of Flexible Pavement

6.2.1 Horticultural Maintenance

The contractor shall maintain all existing trees, plants, shrubs and other suitable vegetation in the median and right of way strictly according to the desired density and ensure the conservation of all trees, shrubs and similar vegetation, in the median and within the right of way by promptly replacing the casualties . The Contractor shall also take adequate and appropriate measures, during the various seasons, to ensure the survival of the vegetation.

6.3 Road property management

The Contractor shall ensure the maximum availability and efficient utilisation of the assets for the NHAI. This shall also include the protection of the right of way from encroachments and other unauthorised activities.

For this purpose, the Contractor with the help of the Authority Representative and Revenue Authority shall maintain Land Record Register for entire NH ROW and shall also draw up a comprehensive asset register detailing the condition of the entire existing road and building assets. This asset register shall be maintained and continually updated after any additions to the infrastructure and after each of the required inspections.

Any damage or loss to asset of highway like signages, delineators, boards etc. by way of theft or due to negligence of the Contractor, shall be fully recoverable from the Contractor.

6.3.1 Unauthorized Encroachments

The strict enforcement of the requirements of the NHAI shall be a significant obligation under the Contract. The NHAI shall define the Right of Way and their requirements with respect to un-authorised accesses, encroachments and the like.

The Contractor shall be required to detect report, use it's best endeavors and remove all unauthorised encroachments within the right of way as soon as possible. The Contractor shall be required to record all such encroachments and seek any assistance from Police, local authorities and the NHAI as it deems fit, in order to ensure that all such encroachments are removed.

At the start of the Contract, the Contractor shall be required to determine all encroachments and unauthorised accesses to the highway, existing at time being granted access to site. The Contractor shall list out the encroachments with a description, location and extent of each encroachment, draw up a method statement and programme for the removal of the unauthorized accesses or encroachments for approval by the NHAI. All existing encroachments shall be removed, and un-

authorised accesses closed within 3 months of the Contractor being granted access to site.

6.4 Incident Management

The Contractor shall set up and maintain an Incident Management System (IMS) and supply regular incident statistics to NHAI.

Incident Management entails a set of coordinated activities initiated by the Contractor when an incident (an extraordinary event resulting in the reduction of road capacity or creates a hazard for users) occurs, in order to minimize the effects of the incident and restore normal capacity and safety levels to all affected road facilities as efficiently as possible.

The Contractor has to identify relevant agencies (e.g. rescue, fire, hazardous materials, traffic, police, ambulance, hospitals, alternative routes, cleanups) and their representatives and to liaise with these representatives on behalf of the employer.

The incident management centre on the project highway (minimum 500 sqm.) shall be continuously staffed on a 24 hours basis. The Contractor shall maintain records of the details of all incidents (e.g. collision, hazardous material, breakdown, etc). After occurrence of any major incident, resulting in multiple loss of life, significant periods of road closure or major route rehabilitation work, an incident debriefing report shall be produced and forwarded to NHAI within 24 hours of occurrence. The Incident Management Centre shall monitor the location of route of incident management vehicles / Rescue operation vehicles through VTS on continuous basis.

Contractor will keep a record of the removed accidental/damaged vehicles by taking a dated photograph of the same and will submit the report on weekly basis to the Employer/Engineer.

Contractor will remove dead animals/birds from the carriageway and bury them at a suitable location as directed by the engineer/employer within two hours of the incident and accident vehicles/Debris within 4 hours. If contractor fails to remove the dead animals/birds from the carriageway within two hours of the incident, he will be levied a penalty of Rs. 10,000/-per such incident.

6.4.1 Route Patrols

Patrol Vehicle Specifications:
Every Patrol Vehicle (PV) should adhere to the minimum specifications as described below:

Vehicle Type :

- PV should be a large size Support Utility Vehicle (SUV) or Multi Utility Vehicle (MUV) with a seating capacity of minimum 4 people.

- PV should have trunk with open ceiling at the rear end of the vehicle with minimum trunk dimensions of 1400mm × 1400 mm × 900 mm where 1400 mm is the length of trunk measured from inside, 1400mm is the breadth of trunk

measured from inside and 900 mm is the height measured from the surface of trunk to the top ceiling of the seating area of the vehicle.

- The PV should be a new vehicle and should not have covered more than 2000 km at the time of procurement (from date of first registration)

- PV should be able to accelerate from 0 km/hr to 80 km/ha within 20s with a top speed of 80 km / h when tested in accordance with IS: 11851-1986.

Two-external equipments :

- PV should have high intensity red and blue blinkers along with light bar mounted on top of a vehicle.

- PV should have 1 Portable Variable Message Sign (VMS) for large display of warning. The portable VMS should have a single line display with the minimum height of 200 mm for each character. The overall length of signboard should be at least 1500mm and display colour should be red. VMS should be clearly readable from 50m distance.

- PV should have provision for fog light.

- PV should have beacon lighting – white colour flashing light mounted at the top of the vehicle.

Branding and recognition:

The PV conspicuity code is split into three sections

- Colour
- Conspicuity improving items
- Recognition of personnel

The Section "Color" describes the vehicle basic color. The section "Conspicuity Improving Items" includes all symbols, marking and striping defined as such by this standard. The section "Recognition of personnel" describes the dress code and safety garments of Patrol Vehicle personnel.

Color **:**

- The basic color of the complete exterior of PV should be brilliant blue, front, rear and side bumpers included. The colour should be weather resistant and withstand daily cleaning and washing.

Conspicuity Improving Items **:**

- The definition includes all marking and symbol as shown in the sketch below. The vehicle should be printed with brilliant blue on the entire body.

- PV should have "NHAI Highway Surveillance Unit" written on all four sides of the vehicle in brilliant red color of retro reflective quality as shown in figure-5.

- PV should have a text at the entire of all four sides of the vehicle with "Emergency Number" written on top and "1033" written right below "Emergency Number" in brilliant red color of retro reflective quality. The

"Emergency Number" marking should be atleast 10 cm high and the ratio of height of "1033" and "Emergency Number" should be 2:1.

Recognition of personnel :

- All PV Personnel should wear brilliant blue color uniform including brilliant blue color jackets required in winters.
- Safety garments for PV personnel should conform to at least ISO 14116:2008.

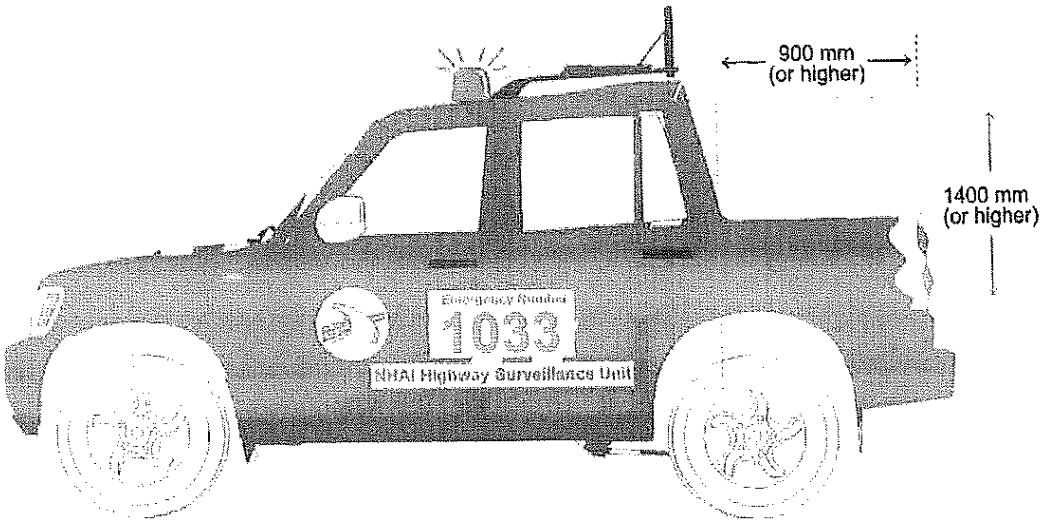


Figure 5 : PV - Side View

The O&M contractor is required to provide 24 hrs per day route patrols to assist the road users of the highway, to provide information, feedback and perform functions in relation to incident management. To achieve this, the Patrol vehicles fitted with VTS should be fully equipped as well as the patrol persons should be adequately trained in traffic management, road safety and primary first aid. The purpose of these patrols is to:

- Provide the users of the highway with basic mechanical help for vehicles that breakdown on the road and also protect other users from such vehicles.
- Immediately identify traffic hazards of whatever nature, such as unauthorized parking, public transport vehicles, and obstructing traffic during passenger loading and unloading, debris, stray animals and the like. The operator shall take the necessary measures to remove such obstructions.
- Provide emergency management at accident scenes until such time as the appropriate authorities arrive.
- Assist with the removal of damaged or mechanically impaired vehicles from the highway.
- Provide road user information and to further the image of National Highway Section.
- Maintain daily records of assistance provided to road users.

- Observe, record and report suspect aspects of the highway, hazards and incidental damage caused by vehicles, floods, storms or other random events, such that the highway maintenance records and database are continuously improved.

Patrol Vehicles / Rescue Vehicles

Vehicles should be fully covered having sufficient space for the required equipment storage, fitted with rotating light and hooter, and painted with approved unique colour pattern for quick recognition, with the NHAI name and emblem painted prominently on sides, back and front, together with the Control Centre and Help line numbers. Vehicle should be in good condition and registration number not older than two years.

Each vehicle should also carry the following equipment.

a) Fire extinguisher 1 no.
b) Gas cutter with protective glass (2 nos.)
c) Liquid container 2 no., Water container with fresh water 1 no. ,Funnel.
d) Rubber Gloves, Leather Gloves (1 pair each)
e) Brooms one hard bristle, other soft-2 no.
f) Gum boot 4 pr, Rain coat 4 pr., Blanket 1.
g) Torch lights – 4 nos., Spare Batteries. ,Flashing light 1 no.
h) Hydraulic jack, towing chain, Animal hook, rope.
i) Tool set (with standard set of spanners, pliers hammer etc), shovels.
j) Battery Charger, Jumper cables
k) Diamond cutter and chain saw (for cutting metal, reinforced concrete and wood) crow bar (16").
l) Digital Camera, measuring tape.
m) Paper pad, Forms, pen/pencils, folders.
n) First aid kit, Rain Coat, water proof sheets, stretchers (two numbers)
o) List of hospitals

Each vehicle should also carry the following Traffic Management Equipment, (used/ worn out items shall be replaced forthwith with new ones)

a) Signboards – "Accident ahead" – 3 Nos. "Lane merging" – 3 no. "Direction Arrows" – 3 no, "Speed Limit" (80/60/40)-3 no, "Keep left / right" – 2 no (all signs 1200 mm size and of retro reflective type (high intensity grade).
b) Sign Stand set (one for triangular and other for circular sign) 6 sets.
c) Flags, whistle, reflective hand signal.
d) Traffic cones 500 mm size with solar bulb mounted on top – 20 Nos.
e) Barricades 4 Nos. reflective type (100 m), tape, stands, Flags of 600 mm by 600 mm made of good read cloth secured to a staff at 1 M length, Paddles of at least 600 mm wide and provided with rigid handle with markings SLOW, STOP.
f) Reflective jackets – 12 No.

As a minimum, each patrol vehicle should carry sufficient communication equipment to render its staff capable of direct communication with the incident Management Control Center established.

Manpower:

The team which is to be deployed with each patrol vehicle, needs adequate training for their tasks, especially in first aid, vehicle maintenance and minor repairs. The contractor must employ sufficient manpower to work in shifts for each patrol vehicle. Typical staffing shall be:

a) Route Patrol In-Charge
b) Route patrol assistant
c) Driver, with knowledge of vehicle repairs.

Typical duties of the Route Patrol In-Charge are:

a)Patrol the corridor to ensure obstruction free flow as per shift standards
b) to report to police and assist injured at accident scene and remove all obstructions from road when the vehicles are cleared
c)To provide first aid to injured, contact control room and ambulance service if needed, assist police
d)Report all incidents on radio control, to control room. e)To ensure safety of traffic with minimal delay at accidents.
f) To assist motorists on broken down vehicles and to ensure that they do not obstruct free flow
g)Maintain relations with all emergency services, and local safety councils h)To report carriageway condition, especially traffic guidance aids, signs, markings condition, condition of drainage, ROW plantations, medians plantation etc.
i)Check on Encroachment irregularities taking place within ROW , and prevent unauthorized entry into the corridor.
j) prevent theft of assets and report
k)attend to urgent maintenance for safety requirements.
At all times, the Route Patrol In-Charge should have with him a list of telephone numbers and address of all concerned in providing the Road Users Services.

On duty, all staff shall wear distinctive standard jackets having company LOGO, with night visibility. They are to deal with public and hence should be well trained to be courteous and helpful.

The Patrol Vehicles are required to be provided as per NHAI/Policy Guidelines/Strengthening the Incident Management services/2018, Policy No. 12.19, dated 20.03.2018.

II Ambulance

The road rescue ambulance shall comply with homologation requirements given in standards notified under CMVR 1989 and the AIS-125 Code. Wherever, there is difference in the homologation requirements given in other standards notified under CMVR 1989 and AIS-125 code, the requirement of AIS-125 code will be applicable.

The rescue ambulance vehicle shall be a Swaraj Mazda/ Tempo traveler or equivalent which should be a new vehicle and should not have covered more than 2000 km at the time of procurement (from date of first registration)

Colour

The basic colour of the complete exterior of the ambulance should be brilliant blue and it should have NHAI name and emblem painted prominently on sides, back and front, together with control center help numbers. The brilliant blue colour Code is C:87%, M: 74%, Y:0%, K:0% and should be weather resistance and withstand daily cleaning and washing.

Conspicuity improving items:
The definition includes all marking and symbols and shown in the Figure 3 and 4 below. All C2I-markings should be in brilliant red, RAL-Code 3024 and in retro reflective quality. Conspicuity improving items: "AMBULANCE" marking, the Star of Life and the emergency number symbol. All "AMBULANCE" marking must follow a 7:1 ratio, length to height.

- Front : No less than 50% of the front side of the vehicle should be brilliant Blue in contrast to no less of 10% brilliant red. The word "AMBULANCE" on brilliant blue background, minimum of 65% of the hood width, shall be in mirror image (regerse reading) for mirror identification by drivers ahead.

- Side: The side of the vehicle should be equipped with a two lined red on the white ground colour as shown in figure 4. The vehicle side should be brilliant blue followed by an "AMBULANCE" marking on the same height. "Star of Life" symbol, with a size of 40 cm ×40 cm, and the emergency number logo, with a size of 40 cm ×75 cm. The vertical centre from both of them should match the vertical centre of the side windows of the driver cabin. The words "Basic Life Support" shall be marked respectively just above the word ambulance in size no less than 50% of the size of the word "AMBULANCE".

Emblems
- NHAI emblem should be placed in allowed instead of "XXX" in a non-reflecting manner and the size can't be bigger than 60% of the "AMBULANCE" markings. Ambulance calling number 1033 must be displayed prominently on the side and back of the Road rescue ambulance.

Warning lights
- All warning lights have to be mounted rectangular to the horizontal ground. They must provide 100% of their intensity in a vertical angle of ±4 degrees and 50% in a vertical angle of ±8 degrees. The minimum intensity is for blue and red lights at 100cd at daylight and 200 cd in the night. The horizontal minimum angle should be at least 45degrees. All rights must flash between 2Hz and 4Hz and should be mounted as on the graphic below:

Flash Pattern
1. Indicates light flashing the same time.
2. Indicates light flashing.
3. 180 degree out of phase with 1.
4. 'x' indicates 'ON' lights in primary and secondary mode.
5. 'y' indicates 'ON' light only in primary mode.
6. 5 'z' indicates 'ON' light only in secondary mode.

- Light marked with "red blue" must show red and blue in one piece one at a time. In daytime they must flash red in nighttime they must flash blue. Two lights have to be mounted in the lower middle windshield only flashing to the outside of the car. All lights should be flashing as shown in the graphic above. To switch from Primary into Secondary Mode there has to be one switch that allows only one mode.

Sirens

All siren loudspeakers have to be mounted on the front of the vehicle. Hidden installation is allowed. The main sound direction must be in driving direction. Permitted are wail and yelp signals that cycle between 10-18 respectively 150-250 per minute at an sound pressure level of 110dB(A) to 120dB(A). The sirens should be tested in accordance with IS 1884 (though not covered in the standard). The frequency range must be at least one octave and should be between 500 Ha and 2.000 Ha. An additional electronic air horn can be sued. Further there should be a public address system that can be worked at all times ergonomically from the driver's seat. The siren switch can only be used if the warning lights are on.

The ambulance is required to be provided as per NHAI/Policy Guidelines/Strengthening the Incident Management services/2018, Policy No. 12.19, dated 20.03.2018.

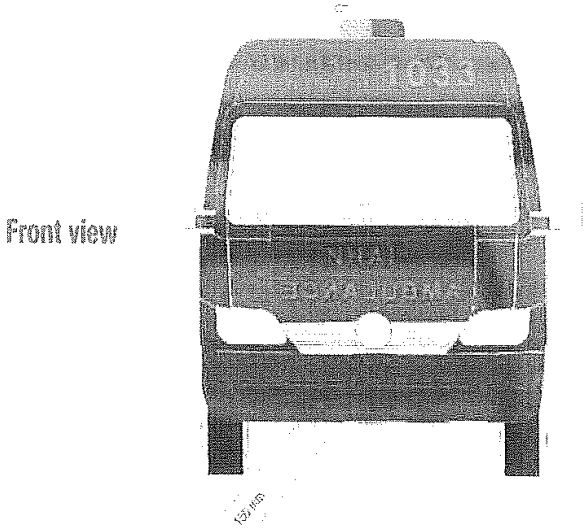


Figure 3: Rescue Ambulance - Front View

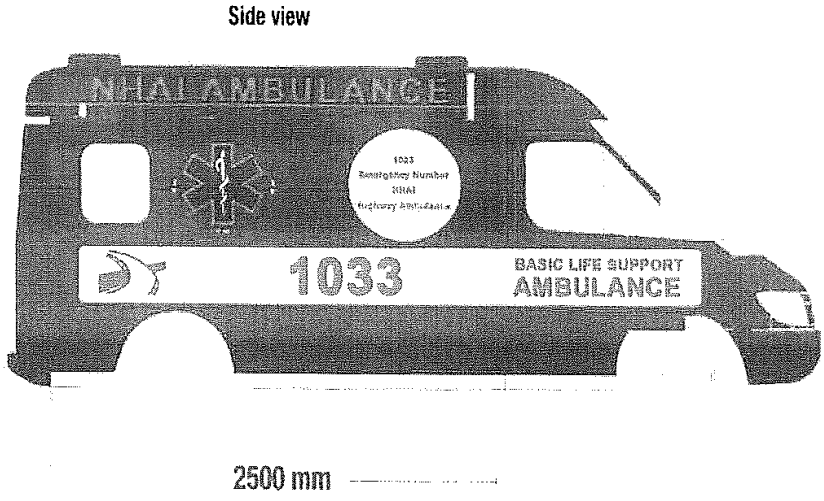


Figure 4: Rescue Ambulance Side View

The vehicle fitted with GPS/VTS should be in good condition and registration number not older than two years. The vehicle shall run minimum 5 km. daily (even for dry run) to be eligible for monthly payment.

A) General Ambulance:

Folding Doctor Seat with Belt with adequate height in relation to the stretcher, Antistatic, water proof ply board vinyl/flooring, Channel/Locking system for rolling stretcher, High intensity blinkers, light bar/siren/beacon, Electronic siren with Public Addressing System, Internal lighting with three spot light embedded in ceiling, AC/DC connection and outlet points, Wash basin with Stainless Steel Tank, SS Trash bin Cabinet integrated with interiors, Head racks and cupboard, Attendant seat with seat belt to double as second stretcher for stable patients, Provision for communication system where the location of ambulance can be located, Provision for fog light on sides, Cool/Warm boxes, Provision of Fire Extinguishers, Handheld Spotlight, Inverter with the facility re-charging from 220V AC and Vehicle's alternative. Oxygen delivery system comprising of Cylinder Trolley, pressure tubing with regulators, Roof mounted Air-conditioner with appropriate cooling capacity with additional blower for Patient Cabin, Extrication equipment and Good Suspension to cater for smooth transportation.

B) Basic Life Support system

Automatic loading stretcher, Scoop stretcher, Folding stretcher, Spine board full, Vacuum splint kit/foldable splints, C-Collars, Oxygen Cylinder with accessories mounted/with manifold and pressure indicators, Oxygen Cylinder (aluminium portable), BP Instruments (Wall mounted-Aneroid), Stethoscope, Automatic defibrillator, Resuscitations bag (ambu bag, laryngoscope, airways and mask of different size including pediatric), Manual foot operated suction pump. I.V Fluid and I.V Sets, Tourniquet, First-Aid Box (Dressing material/Antiseptic lotion/Analgesic etc), Linen/Blanket, Laryngeal mask airway of all sizes.

The following paramedical staff are required with proper uniform and name of the person written on the uniform:

a)	Trained Paramedical staff	1
c)	Nursing staff with knowledge of first aid	1
d)	Driver for ambulance	1
	Number of Ambulance : ------	

III Tow Away Vehicle

The vehicle fitted with VTS shall be in good condition and registration number not older than 2 years. The vehicle shall be painted with approved colour pattern with NHAI name and emblem painted sides, back and front. The Contractor must employ following manpower to work in shifts :

a) Driver, with knowledge of vehicle repair
b) A helper

The vehicle shall run minimum 5 km. daily (even for dry run) to be eligible for monthly payment.

Number of Tow Away Vehicles :----------

Note :

i) In case of absence/deficiencies in respect of vehicles / manpower / equipment as mentioned under Clause 6.4 found during inspection by Engineer/Authority Representative a penalty of Rs. 5000/- per item per incidence shall be levied.

ii) Incident Management Vehicles may be discontinued during the period of contract by the Employer. The agency will not have any claim due to de-mobilization of these vehicles at any stage.

6.5 Safety Improvement (Engineering Works)

The contractor shall execute junction improvement, provision of Blinkers, flood lights, FOB/PUP, Rumble Strips, Signages etc. and other improvements as proposed by Engineers' Representative. The Contractor shall execute the work strictly as per specifications and drawings. The drawings for same are to be got approved from Engineer's Representative.

6.6 Inspection

Full and complete inspection of the highway section shall be undertaken at appropriate intervals as mentioned in this section & section VIII (Implementation Manual & Maintenance Intervention Levels and as mentioned in Clause 6.13). The Contractor shall provide appropriate testing equipment for qualitative inspections, such as reflectivity meters, straight edges and the like.

6.6.1 Daily followed by weekly and monthly Inspections

Items to be inspected daily on regular basis followed by weekly and monthly inspections shall include:

- Potholes
- Cracking & Patches
- Rutting
- Defective bridge decks area and bump at approach
- User information - road marking and road signs
- Blocked drains
- Toll Management System (Manual) and Tollbooth
- Tow Away Trucks, Cranes etc.
- Frequency of Highway Patrol
- Accidents/Incidence/Road Block

6.6.2 Quarterly Inspections

Items to be inspected at quarterly intervals shall include :

- bridges – structural elements for damage

- culverts – structural elements for damage
- blocked drains
- road marking
- road signs

6.7. Repairs

Repairs arising out of the inspections shall be carried out by the Contractor as per performance standards after a joint assessment with the Engineer and approval of NHAI.

6.8 PERFORMANCE STANDARDS

6.8.1 PERFORMANCE STANDARDS FOR MAINTENANCE:

The performance standards define the level at which the proposed facility is to be maintained and operated.

Road Maintenance: (As per MOST Specifications)

SL. NO.	SERVICEABILITY INDICATOR	REQUIRED MAINTENANCE LEVEL	PERMISSIBLE TIME LIMIT FOR DEFECT RECTIFICATION	FREQUENCY OF INSPECTIONS BY THE CONTRACTOR TO ENSURE REQUIRED LEVEL OF SERVICE
1.	Potholes/km (max. Numbers)	5 nos. in a stretch of 5 km.	Two days	Daily on Regular basis followed by weekly & monthly inspections
2.	Cracking & patch (max. Permissible)	5.0 per cent of road surface in a stretch of 1 km.	Seven days	- do -
3.	Rutting	1.0 per cent	Three days	- do -
	(20mm), max. Permissible limit	in a stretch of 1 km (measured with 3 m straight edge.)		
4.	Defective bridge decks area and bump at approach (max. Permissible)	Nil	Fifteen days	- do -

5.	User information	All road signs, km stones & road marking in good condition	Seven days	- do -

B) Route operations

SL. NO.	SERVICEABILITY INDICATOR	REQUIRED MAINTENANCE LEVEL	FREQUENCY OF INSPECTIONS BY CONTRACTOR TO ENSURE REQUIRED LEVEL OF SERVICE
1.	Tow away trucks, cranes & ambulances etc.	To reach the incident spot within 30 minutes of incident occurrence	Daily on regular basis
2.	Frequency of highway patrol	Every 4 hours on entire stretch (logging system)	Daily on regular basis
3	Removal of dead animals /birds	To reach the incident spot within 60 minutes of incident occurrence	Daily on regular basis

6.8.2 Performance Standards for Drainage System

The inspection and maintenance shall follow the guidelines specified in IRC: SP35-1990 or any modification to it by Indian Roads Congress.

- Pre-monsoon inspection and repairs shall include: detailed condition inspection of all bridges, culverts and the longitudinal drainage system. This shall be followed by repairs as required. Clearance of waterways of cross-drainage (CD) works and bridge waterways (vegetation, silt) within the right-of-way and 100 m on either side of the right-of-way, clearing the longitudinal and surface drains, repairs to flooring and pitching and face walls which should be brought to intact condition and painting of bridge markings shall be carried out.

- During the monsoon, any blocked vent-ways shall be cleared immediately.

- After monsoon a detailed inspection shall be undertaken to identify any severe damage. One month after the cessation of rain, the structures shall be given one coat of white wash or colour wash as a protective measure.

6.8.3 Performance Standards for Operations

p) For incident management system:

- Set up of Control Room

Staffing – 24 hrs/day and 365 days/year

- Response time to a single incident – ½ an hour after receiving notification
- Multiple incidents – as soon as possible

- The facility shall be kept clear of all obstructions to traffic. Broken down vehicles, accident remnants, fallen trees, or any other obstructions should be cleared at once, after completing any legal formalities. The availability of Tow-trucks, cranes, and other equipment required for this purpose shall be ensured.

- Accident relief measures, including an ambulance, shall be available round the clock. The response time should be 30 minutes. Traffic regulation and management to minimise the disturbance due to accident to other traffic shall be taken by providing temporary traffic signs, cones, reflective tape etc.

- The intersections at either end or in-between shall be managed such that delays to through traffic are minimised.

- Regular patrolling shall be done to ensure smooth traffic movement on the facility. The frequency of the patrol shall be at least once in 4 hours for the entire length of facility.

- In respect of route operation like patrol vehicle, ambulance and towing of vehicle, any case of non compliance as per Cl 6.8 of 'Performance Standard', a penalty of Rs. 10,000/ for each non compliance incident will be levied.

- The log books for Route Patrol Vehicle, Ambulance and Crane shall be maintained as per "Logging System". i.e. exact time reached at particular incident and time at which the spot of incidence left out. Both vehicles should not waste time unnecessarily. From the entries of log book, if it is found that time is exhausted unnecessarily / arbitrarily, reduction in the rate of concerned BOQ item shall be made. Engineer's decision in this regard shall be final.

- Signed muster rolls of staff pertaining to route patrols and Ambulances shall be maintained. Any absenteeism of route patrol staff shall attract a penalty as per Clause 6.4. The decision of Engineer shall be final in this context.

- The Route Patrol Vehicle, Ambulance and Crane shall be equipped (for 24 x 7 period and total duration of contract) with Vehicle Trafficking System, equipment / medicines as mentioned in Cl.no.6.4 of "Incident Management". Any shortage of equipment / medicines shall attract penalty as per Clause 6.4. The decision of Engineer shall be binding on the contractor.

- The contractor shall submit following documents along with each monthly statement of work done.

  a) The photographs (hard copies) of each incidence of damaged towed vehicle with use of crane for entire month.

b) The undertaking of route patrol In-charge and driver of each damaged towed vehicle stating that "no charges" i.e. the services of crane made freely available to damaged vehicle.

The claim for BOQ item, "use of crane" shall not be entitled in absence of above mentioned data. Reduction in rate on pro-rata basis shall be proposed in absence of above data.

- The contractor shall submit the following documents along with each monthly statements of work done.
  - **i)** The reports as per IRC 53 – 1973 and formats approved by Engineer of accidents occurred during the month.
  - **ii)** The Photographs in hard and soft copies of all accidents and in soft copies for all other incidents.
  - **iii)** The reports of incidents other than accidents shall be submitted in the format approved by Engineer.
  - **iv)** **The contractor** shall **submit hard copies of VTS of all vehicles generated reports such as transit, / stoppage / Idle, average speed etc. for entire month along with each monthly bill.**

  The photographs (hard copies) supplied shall be paid under concerned BOQ item.

- The contractor shall submit the daily report of accidents / incidents occurred on each of next day. Failure of which shall attract penalty of Rs. 500 / incidence.
- Each route patrol vehicle, ambulance and crane vehicle shall be installed with precise Vehicle Tracking System (VTS) of reputed ISO 9001 company. The VTS shall be based on Global Positioning System (GPS) and GSM / GPRSM technology. The system shall also include micro, live, real time tracking web based software by use of which GIS maps shall be accessed and transit / stoppage / idle / over speed reports of vehicles shall be generated.
- **The payment to incident management vehicle will be made based on the report of vehicle tracking system. The payment may be proportionately deducted in case route operations** has **not been carried out as per Clause 6.8.1 (B) of Scope of Work.**

- For operation of this system one computer of brand approved by the Engineer alongwith internet facility shall be installed at "Control Room, by the contractor.

- The contractor shall install one broad band internet connection. He shall also make necessary arrangements for uninterrupted electricity supply to Control Room.

- The contractor shall bear all expenditure involved in purchasing VTS, software's, one computer and internet connection, maintenance and operation charges (for total period of contract) inclusive of all taxes as applicable.

- The contractor shall be responsible for 24 x 7 working of VTS. The necessary liaison with Producer Company is sole responsibility of contractor.
- The Control Room shall be manned by a Manager 24x7 to have proper monitoring on the route operation vehicles. The Control Room shall have record of the VTS of all the vehicles, photographs of the route operations of the previous day, as mentioned above, muster roll of the staff, previous day's report of incidence, accidents details duly filled in as per format as specified above and other reports related to route operations as defined by Engineer-in-charge.

6.9 – Performance Standards for "Maintenance of existing and new plants / shrubs / hedges grass in median".

The length of median to be maintained under this BOQ item means the stretch of median in which plantation of hedges / shrubs / flowering trees are already in existence or proposed to be planted.
The following stretches of road are excluded from median maintenance length.

Flyovers / Major bridges.

a) Median cuts
b) Lined drain in median and where concreting is done for full width of median.
c) Double face 'W' crash barrier installed in median & where plantations have not been planted.

A) **Removal of weeds / vegetation and unwanted debris**

i) The contractor shall keep median without any weeds, unwanted vegetation, debris etc. for the entire period of contract. For this purpose he should deploy at least the following for each month of contract period.
   a) One labour / day (8 hours) for every four Km. of median.
   b) One tractor with trolley / day (8 hours) for every 35 km. stretch of median.
   c) One supervisor for every 35 km. stretch of median.

   This deployment shall be made available for whole month from June to Feb of a year. From March to May one labour / day (8 hours) for every 06 km. of median and one tractor with trolley / day (8 hours) for every 50 km. of median shall be deployed.
ii) The contractor shall maintain separate signed muster rolls of deployed labours & supervisors and log books of tractors. The muster rolls and log books shall be made available for inspection. Xerox copy of log books and muster rolls shall be submitted along with each monthly statement of work done by the contractor.
iii) The deployment mentioned as per (i) is minimum and shall not relieve contractor from his obligation to keep the median without weeds, unwanted vegetation and debris from the median. He shall increase inputs as per requirements of site conditions and Engineers instructions.
iv) If a contractor fails to keep median without weeds, unwanted vegetation, debris etc. (as per provision of BOQ) penalty of Rs. 500/ Km. / incidence to Rs. 1500/ Km / incidence shall be imposed. Engineers decision in this context is binding on contractor.
v) Engineer/PD may ask for supporting details regarding engagement of labour to satisfy themselves before making payment.

B) **Watering**:-

i) For the specified period of the year excluding the monsoon months (2-3 months) [period shall be specified by Engineer depending on site condition] contractor shall prepare monthly plan for deployment of water tankers in consultation with Engineer and shall submit the same seven days prior to next month. It is obligatory on contractor to deploy the number of water tankers as per plan. If Engineer observes number of water tankers deployed (as per plan) are not

sufficient as per site condition, he shall instruct to increase the water tankers. Engineers decision shall be final.

ii) If contractor fails to deploy the water tankers as per Engineer's instructions and as per monthly plan each incidence of non deployment, a penalty of Rs. 8000 / day / incidence shall be imposed.

iii) The methodology suggested vide (i) to (ii) shall not relieve contractor from his obligation of non-wilting of any hedge / shrub / flowering trees of median. If any existing hedge, shrub, flowering tree etc. got dead it should be replaced by contractor at his own cost. Engineers decisions in this context is final

iv) Deployed water tanker shall be fitted with red electric blinking signal and red flag at top of LHS back end. The safety measures as per IRC 112 shall be taken while watering

v) The contractor shall maintain log books of each deployed water tanker and submit the Xerox copies along with each monthly statement of work done.

C) Trimming of plantation and application of insecticides / pesticides

i) Trimming of hedges and flowering trees shall be done as and when required and as ordered by Engineer.

ii) Supplying and application of insecticides / pesticides shall be done as and when required and as ordered by Engineer.

iii) Each incidence of failure of trimming and application of insecticides / pesticides shall be penalized at the rate of Rs. 500 / Km. / incidence. Engineers decision shall be binding on the contractor.

iv) The contractor shall submit the daily reports (on next day) of out put of various men and machinery deployment for median maintenance in the formats approved by Engineer. Failure of which shall impose penalty of Rs. 1000 / incidence.

6.10 – Performance standard for "carrying out cleaning, removing of dust / silt / thrash ---- from carriageway.

i) This BOQ item is on km basis. The total length of stretch under consideration is taken under this item. However width of carriageway to be kept clean as per BOQ provision, it includes.

a) Total width of carriageway (LHS + RHS) including median width.

b) Width of service roads (LHS + RHS) wherever service roads are in existence.

c) Width of all structures such as flyovers, major bridges, minor bridges, culverts, subways, etc.

ii) For cleaning of carriageway contractor shall deploy mechanical broom with VTS for total period of contract. The deployment of mechanical broom shall be for at least 20 days / month. Contractor shall maintain log book of this mechanical broom and submit the Xerox of this along with each monthly statements of work done alongwith the report of VTS.

iii) In addition to mechanical broom contractor shall deploy following men / machinery for each month and total duration of contract.

a) One unskilled labour / day (8 hours) for every three km. of stretch of road.

b) One superior for every 30 km of stretch of road.

c) One tractor with trolley / day (8hours) for every 30 km. of stretch of road.

iv) The contractor shall maintain separate signed muster rolls of deployed labours & supervisors and log books of tractors. The muster rolls and log books shall

be made available for inspection. Xerox copy of log books and muster rolls shall be submitted along with each monthly statement of work done by the contractor.

v) The deployment maintained as per (ii) & (iii) is minimum and shall not relieve contractor from his obligation to keep the carriageway clean as per BOQ provisions. It is obligatory on contractor to increase inputs as per requirements of site conditions and Engineers instructions.

vi) The contractor shall submit daily reports (on next day) of out- puts of men & machinery deployment in the formats approved by Engineer. Failure of which shall attract a penalty of Rs. 1000 / incidence.

6.11 – Performance standard for "Removal of rank vegetation / weeds / …… etc.

Indent for this work shall be issued once in year by the Engineer. After execution of this indented quantity, it is the sole responsibility of contractor to keep that particular area without any vegetation / weeds / grass for the remaining period of contract (two months). For this purpose he shall make use of men / machinery deployment as in case of performance standard Cl. no. 6.10.

6.12 ADDITIONAL MAINTENANCE STANDARDS

6.12.1 Maintenance standard for cleaning, clearing and repairing roadside lined drains

Scope

i. The work shall consist of removing material to bring them to original shape/drainage capacity.
ii. Disposal of sediments, extraneous debris or vegetation growth, blocking flow.

Methods, Tools and Equipment

i. Safety devices and signs shall be placed as per MoRT&H clause no.112
ii. The debris, sediments, vegetation growth and excess material shall be excavated. The excavated material shall be disposal off as directed by Engineer-in-charge with all leads and lifts.

iii. The drain slopes and sides shall be dressed up to original flow line and cross section.

6.12.1.3 Measurements for Payment

The work shall be measured in terms of rm of drain cleaned, cleared and repaired.

Rate

The contract unit rate for cleaning and clearing roadside pucca drains shall mean payment in full for carrying out all the required operations explained above including compensation for:

a. Setting out and providing safety devices and signs placed in work area. As per MoRT&H clause no.112.

b. Furnishing all materials to be incorporated in the work including transportation of excavated material and disposing of the same with all leads and lifts.
c. All labour, materials, tools, equipment, safety measures, testing and incidentals necessary to complete the work to specifications.

6.12.2 Maintenance standard for cleaning, clearing, deepening and reshaping of roadside unlined drains

6.12.2.1 Scope

i. The work shall consist of cleaning, clearing deepening and reshaping of roadside unlined drains and making shallow lateral drains on shoulders to drain out the rain water/surface water effectively from bituminous surface as well as from roadside berms.

6.12.2.3 Methods, Tools and Equipment

i. Safety devices and signs shall be placed in accordance to MoRT&H clause no.112
ii. The unlined drains should be cleaned and cleared off the deposition of sediments, extraneous debris or vegetation blocking free flow in the drain. This work may be carried out manually.
iii. In case any erosion is noticed then these drains should be deepened/ widened in proper slope as directed by Engineer in-charge.
iv. For draining out the standing water from road edges and unpaved shoulders, the shallow lateral drains at regular intervals shall be made manually as and when required.
v. The drain slope and sides are neatly dressed up to required flow line and cross section.
vi. The excess excavated material should be well dressed, watered and compacted in nearby area or transported away from the site with all leads and lifts, as directed by the Engineer in-charge.

6.12.2.4 Measurements for Pavement

The work shall be measured in unit of RM. for roadside drains only and no separate payment shall be made for making shallow lateral drains.

6.12.2.5 Rate

The contract unit rate for cleaning, clearing, deepening and reshaping of roadside unlined drains and making lateral drains on shoulders shall mean payment in full for carrying out all the required operations explained above including compensation for:

a. Setting out and providing safety devices and signs placed in work area. As per MoRT&H clause no.112.

b. Furnishing all materials to be incorporated in the work including all royalties, fees, rents where necessary and all leads/lifts.
c. Transporting the excavated/recovered material and disposing of the same with all heads and lifts as directed by the Engineer in-charge.
d. All labour, materials, tools, equipment, safety measures testing and incidental necessary to complete the work to specifications

6.12.3 Maintenance standard for routine maintenance of road signs and delineators, kerbs

6.12.3.1 Scope

i. The work shall consist of washing of signs, delineators, removal of posters, cleaning of kerbs etc. on a regular maintenance cycle and repair to supporting structures with repainting.

6.12.3.2 Methods, Tools & Equipment

i. The road signs and delineators should be thoroughly washed using a detergent solution followed by a lean rinse and whole face of the sign shall be dried.
ii. Defects in supporting structures like bullet holes, surface marks or bent posts shall be repaired with appropriate tools.
iii. Damaged area shall be cleaned and loose/flaking paint shall be removed. Bullet holes shall be filled with filler and supporting structures shall be painted with first quality enamel paint in two or more coats.

6.12.4 Maintenance standard for replacing road signs, delineators mounted on single post/multiple posts

6.12.4.1 **Scope**

i. The work shall consist of replacement of damaged signboards/delineators due to accident or worn out due to age and weathering.
ii. Replacement of missing signboards and major repairs especially to sign faces.

6.12.4.2 **Methods, Tools & Equipment**

i New signboards/delineators in lieu of badly damaged/missing ones shall be provided conforming to MOST specification clause 801 to perform the function and convey message that was originally required (retroreflective type of high intensity grade).

ii. For major repairs following sequence shall be carried out :

a. Beat any holes and indentations flat with a hammer and dolly
b. Clean the damaged area and remove any loose or flaking sheeting, paint or other surface material
c. Fill the holes and indentations with polyster body filler and access material shall be striked off to flush with sign face.

d. Patch the whole of the affected area with existing surface material as required viz. Pressure sensitive, reflective sheeting, paint etc.
e. Restore the legend by black screening or reflective sheeting of correct class cut to shape.

6.13 **Monitoring**

6.13.1 The Contractor shall submit the daily report (by email) indicating the day's activities and the work executed at site. The Contractor shall also inform any changes observed at site such as road condition, structure damages/changes, damages to road-signs, crash barriers, railing, encroachments and any other unusual changes at site before 11.00 AM everyday for the preceding 24 hours.

6.13.2 The daily report should be submitted to PD and Engineer on daily basis as per proforma approved by Engineer in consultation with PD, NHAI.

6.13.3 The detail summary of these daily inspections and work carried out shall form part of monthly bill in the form of email extracts otherwise payment may not be admissible.

6.14

a) Broad Performance Parameter for Solar High Mast Light - 15 mtrs. High

Broad Performance Parameter for Solar High Mast Light	
Height	15mtrs.
Lux	average 40Lux
Light Source	White Light Emitting Diode (W-LED)
Light Out put	White colour (colour temperature 5500 0 -65000 K) minimum. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye .
Mounting of light	for high mast of LED street lighting system 4Nos. X 100W a minimum 15 meters above ground telescopic shape pole,
PV Module	Module r for High mast Street Light A. 2000 Wp module
Battery	Battery for High Mast Street Light A. 48 V 300 Ah Tubular Positive plate Lead acid or gel type VRLA , @
	C/10, Max DoD 75%
Electronics	Min 85% total efficiency
Average duty cycle	Dusk to dawn
Autonomy	3 days (Minimum 42 operating hours per permissible discharge)
DUTY CYCLE	The LED solar street lighting system will be designed to operate for dust to dawn, under average daily insulation of 5.5 kWh /sq.m. on a horizontal surface.
Warranty :	The module will be warranted for a minimum period of 15 years from the date of supply and the complete White LED solar street lighting and LED High Mast system including the battery) will be warranted for a period of at least 5 years from the date of supply.
Repair/Replacement of damaged part/bulb	Within 24 hours otherwise a penalty of Rs. 5000/- per day will be imposed

b) Broad Performance Parameter for Solar High Mast Light - 7.5 mtrs. high

Broad Performance Parameter for Solar High Mast Light

Height	7.5 Mtr Above the ground Level
Lux	Average-40Lux
Light Source	White Light Emitting Diode (W-LED) of 300 Watt module capacity , 12V 400 Ah or 24 V 200 Ah and LED lights of 18 Watt with 04 numbers light
Light Out put	White colour (colour temperature 5500 0 -65000 K) minimum. The illumination should be uniform without dark bands or abrupt variations, and soothing to the eye.
Mounting of light	for high mast of LED street lighting system 4Nos. X 18W and 4 nos. X 24 watt a minimum 09 meters telescopic shape pole, having 7.5 meters above the ground Level
Module	Module r for High mast Street Light 400 Wp module for 24 W
Battery	Battery for High Mast Street Light 12V 500 Ah or 24 V 250 Ah for 24 W Tubular Positive plate Lead acid or gel type VRLA , @ C/10, Max DoD 75%
Electronics	Min 85% total efficiency
Average duty cycle	Dusk to dawn
Autonomy	3 days (Minimum 42 operating hours per permissible discharge)
DUTY CYCLE	The LED solar street lighting system will be designed to operate for dust to dawn, under average daily insolation of 5.5 kWh /sq.m. on a horizontal surface.
Warranty :	The module will be warranted for a minimum period of 15 years from the date of supply and the complete White LED solar street lighting and LED High Mast system including the battery) will be warranted for a period of at least 5 years from the date of supply.
Repair/Replacement of damaged part/bulb	Within 24 hours otherwise a penalty of Rs. 5000/- per day will be imposed

6.15 **Road Performance Parameter for Solar Blinker**

S.No.	Specification	Details
1	Blinker Size	300 MM (12 Inch) & 200 mm (8 Inch)
2	Body	Molded Polycarbonate, Suitable for extreme weather conditions
3	Lens	U.V. Stabilized, Transport Polycarbonate
4	Gasket	Rubber Gasket for Sealing between Lens and Signal Unit
5	Color	Red / Amber / Green
6	PCB Used	1.5 mm thick, Glass Epoxy for Power Supply / LED Display
7	LED Used	Ultra Bright, Water clear
8	Viewing Angle	24 Degree for LED's
9	No. of LEDs	176 LED (300 mm) 140 LED (300mm) (Power Saver Model) 96 LED (200 mm)
10	Charge Control Unit (CCU)	Built in Type, helps to protect battery from deep discharging as well as overcharging. Also protect Panel from Reverse Voltage.
11	Solar Panel	12 Volt, Wattage as per requirement
12	Battery	(SMF) Sealed Maintenance Free Type
13	Wire Harness	For making all connections easily and correctly
14	Clamps	For Mounting traffic signal, battery box and solar panel
15	Pole	Dia. 3" or 4", Height 2.5 to 4 mt., GI or MS
16	Working Voltage	12v DC
17	Power Supply	Total Solid State Electronic Circuitry
18	Frequency	30 to 40 Flashes Per Minute as desired
19	Operation	24 hours or 12 hours (Dusk to Down)
20	Control Card	In built and solid state
21	Power Factor	>0.9
22	Visibility	500 Mts., Good even during bad weather
23	Certification	IP 65, ISO 9001 : 2008
24	Repair/Replacement of damaged part/bulb	Within 24 hours otherwise a penalty of Rs. 5000/- per day will be imposed

(SECTION-VII)

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

7.1 PREAMBLE:

The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified.

7.2 GENERAL REQUIREMENTS

The Technical Specifications in accordance with which the entire work described hereinafter shall be executed and completed by the Contractor shall comprise of the following:

7.2.1 PART – I – GENERAL TECHNICAL SPECIFICATIONS

The General Technical Specifications shall be the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS" (FIFTH REVISION, 2013) issued by the Ministry of Road Transport & Highways, Government of India and published by the Indian Roads Congress, hereinafter referred to as MORT&H Specifications.

PART – II – SUPPLEMENTARY TECHNICAL SPECIFICATIONS

When an Amended/Modified/Added Clause supersedes a Clause or part thereof in the said Specifications, then any reference to the superseded clause shall be deemed to refer to the Amended/Modified/Added Clause or part thereof.

In so far Amended/Modified/Added Clause may come in conflict or be inconsistent with any of the provisions of the MOST Specifications under reference, the Amended/Modified/Added clause and the additional specifications shall always prevail.

7.2.2 In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specifications of IRC and BIS in that order, Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the Engineer and, in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final and binding on the Contractor.

7.2.3 The Authority/Client shall get the 3rd party quality audit of Bituminous work from any nearest reputed government technical institute for its gradation, bitumen content and thickness for every km. and construction agency shall bear the cost of these tests.

7.2.4 Repairing / filling of all potholes/cracks on the National Highway stretch shall be performed only by using mechanized method with facility to have integrated operation for proper cutting in shape i.e., square/rectangular, cleaning, priming, laying and compacting by mechanical means.

7.2.5 The Contractor will sign the checklist of deliverables enclosed as Appendix at Section II, 4.4 B (b) (iii) which shall be used as a basic monitoring tool so as to ensure that the O&M/renewal obligations are actually fulfilled.

The above provisions are to be complied with by the Contractor/Executing Agency without any financial implication payable to them.

Further if, the Contractor has not been able to fulfill the above mentioned provisions **within a cure period of 15 days, Authority will fulfill these provisions at the risk and cost of the Contractor/Executing Agency.**

(SECTION-VIII)

IMPLEMENTATION MANUAL AND

MAINTENANCE INTERVENTION LEVELS

SECTION – VIII
IMPLEMENTATION MANUAL AND MAINTENANCE INTERVENTION LEVEL

8.1 Introduction

8.1.1 Maintenance & Rehabilitation work of highway through one agency is the work of typical nature, which shall continue up to the expiry of base period specified in the contract (excluding defect liability period). These works need attention, efficiency, continuous monitoring and responsive management. This implementation manual spells out detailed guide-lines for implementing the maintenance programme successfully, defining the various activities to be accomplished by the Employer and the Contractor.

8.1.2 This work includes routine, periodic, recurrent and urgent maintenance activities to repair highway surface, shoulders, road side, drainage facilities, CD work, signs, markings, safety features and inspection facilities. The works of different nature at scattered locations within specified time frame need to be performed confirming to specifications and standards in order to keep carriageway in perfect condition.

8.2 Maintenance Procedures

8.2.1 The complete maintenance programme shall be spread over the initial base period of three months. There are eight significant procedural areas:

- Maintenance Programme Planning
- Resource Estimation
- Identification of Priorities
- Work Scheduling
- Work Management
- Work Control and Quality Assurance
- Payment Procedures
- Records & Documentation

8.3 Maintenance Programme Planning

8.3.1 The maintenance programme planning shall be in two stages

a. First Stage: Within 28 days of issuance of Letter of Commencement by the Employer. Contractor & Engineer shall identify the activities of Routine Maintenance, which shall have to be taken up immediately who check the further deterioration of paved and unpaved surface of carriageway separately. To identify these activities formal field inspection shall be carried out by technical staff of Contractor & Engineer. A management meeting shall then be called within 7 (seven) days of inspection to scrutinize the identified works and then these works shall be quantified. Engineer shall then issue indent to contractor for execution of these works specifying quantity to be executed at different locations, amount of works calculated on the basis of the unit rates quoted by contractor and date of completion. This part of work shall certainly be commenced not later than stipulated date of commencement.

b. Finalisation of yearly maintenance programme: This activity shall begin with the stipulated date of commencement. The various steps proposed to be taken under this are as under :

i. to carryout present state inspection of entire stretch of Highway by Contractor & Engineer.

ii. To identify defects as per various available engineering characteristics of road & measurement of all defects in each sub-section (length of subsection shall be 200 m) based on representative measurements for 25 m length in each sub section. The extent of defects shall be recorded in forms finalized in consultation with NHAI for paved road, unpaved road and structure / furniture. All Defects with its extent shall be assessed in terms of length & area of the sub section, mentioning chainage (locations) in order to have exact estimate of work.

iii. A comprehensive documentation shall be prepared separately by Engineer and Contractor mentioning their assessment of various types of defects in each km of road.

iv. Management meetings shall be called within 15 days of inspection to finalise and then to quantity the defects after comparison of measured condition of road and maintenance intervention levels set out in this Section on commonly acceptable basis. This shall be followed by identification of particular maintenance work proposed to be carried out at site to make good the defects noted above, out of various alternatives available in BOQ.

8.4 Resource Estimation

8.4.1 The Engineer shall workout the yearly requirement of funds based on unit prices rates quoted by Contractor and quantities of various items proposed to be executed. A tentative programme shall be drawn on the basis of resources available with the contractor at different times of maintenance period including available establishment, equipment and labour availability with him. Cash flow available with the contractor shall also be basic input to determine proposed maintenance programme.

8.5 Identification of Priorities

8.5.1 The Engineer shall work out order of priority, judiciously in order that jobs that have the stronger claim or resources placed ahead of the list and those having least claim are placed at the end.

8.5.2 The maintenance activities by order of importance shall be reckoned in the following order or as deemed proper by Engineer:

a. Urgent Works: Emergency repairs, removal of road blockade, repair to road breach, removal of accidental vehicles and dead animals, immediate repairs to CD works.
b. Recurrent Works: Blading and grading of unpaved surface, spot gravelling of unpaved surfaces, clearing of drains before rains, patch repair, local sealing and repair to pot holes.
c. Periodic Works: Re-gravelling shoulders, major repair to defective carriageway, road surface markings resealing and repair to CD works.

d. Other Periodic Works: Laying overlays and reconstruction

8.5.3 The activities mentioned under Routine Maintenance shall be carried out on continuous basis as does not fall in order of priority.

8.5.4 Seasonal variation in the year shall also be influencing factor to decide order of priority of maintenance works.

8.6 Work Scheduling

8.6.1 The maintenance and rehabilitation work of road is of unpredictable nature so quantities shown against each item or work are only representative. It is expected that they would be consumed during the entire base period of works but employer would not be responsible to pay any compensation etc. in case there is variation to any extent in quantity of actual execution of particular item of work with respect to representative quantity shown in BOQ for that particular work.
8.6.2 Scrutinized work proposals shall be negotiated by the Engineer with Contractor for quantity and time to complete those particular activities and accordingly they shall be classified into two groups:

Group – I: Works of short duration of completion (up to 2 months)
Group – II: Works of larger duration of Completion (more than 2 months)

8.6.3 For works under Group I, quarterly indents shall be issued and for works classified under Group 2, bi-annual indents shall be issued by the Engineer. These indents shall mean to identify, quantity the various works which contractor is expected to execute on his unit rates quoted by him at specified locations within the time period assigned in the indents. Each indent shall be treated as part of the work for which contractor has submitted Bids. The terms & conditions applicable in bid document shall also be applicable to these indented works.

8.6.4 In case of urgency requiring immediate actions to remove road blockade, to construct temporary diversion or urgent preventive measures to reduce extent of expected damages or to make precautionary arrangements to handle emergencies. Engineer shall issue interim indents for such works / arrangements to be complied with by the contractor in responsible manner without loss of time.

8.6.5 The price of any such work which are not covered with items mentioned in price bid, the rates and prices in the contract shall be used as the basis for valuation of reasonable rates, failing which after due consultation by the Engineer with the Employer and the Contractor; suitable rates or prices shall be decided by the Engineer with the approval of Employer.

8.7 Work Management

8.7.1 The success of Contract maintenance system lies with good work management. The contractor shall draw activities which shall be accomplished by in house crew and portion of the work to be accomplished with sub contractors.

8.7.2

8.7.3 The system of quarterly reports such as budget reports, resources utilisation report, quality control and status of base maintenance programme (planned versus actual) has to be generated in order to evaluate working of contract maintenance system and to work out upgradation / modification required in the programme. The modification to finalised maintenance programme can be made with mutual consent of both the contractor and engineer to derive best results.

8.7.4 The contractor can also consider to introduce communication system (like mobile, etc). on the Highway for better and efficient management of site.

8.8 Work Control & Quality Assurance

8.8.1 The Engineer shall adopt random sampling procedures to ensure quality control. Engineer shall carry out in- process inspections and end product inspections to collect samples and shall carry out testing in order to determine the degree of adherence to the maintenance standards of delivered or constructed material. Any testing / checking of works by Engineer shall not absolve the contractor from his responsibility to execute works strictly in accordance of MoRT&H / IRC / IS specifications or laid down standards in bid document.

8.8.2 A quality control laboratory equipped with all instruments required to perform tests as indicated in MoRT&H / IRC / IS specifications at frequency mentioned therein shall have to be provided by the contractor. Contractor shall ensure that testing of all material delivered or constructed is regularly carried out by his filed staff as per standard norms and results of these tests are recorded in specified manner and made available to Engineer whenever required by him. The contractor shall provide the QC laboratory, as incidental to work and no separate payment shall be made for this item. The QC lab shall also be made available to Engineer for conducting tests of his own.

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8.8.3 In- process inspections shall be carried out by the Engineer to witness and or to verify the quality / quantity of work, when activity is in process with aim to judge justification of payment. Engineer shall carry out end product inspections after

completion of the activity to provide satisfactory evidence about acceptability of the contractors work.

8.8.4 The results of in process inspections, end product inspections and quality control tests shall form basis of acceptance of completed works and issuance of Non Conformance Report (NCR). Items of Works or unit of material or the end product do not meet the specifications / standards shall be identified by "Non-Conformance-Report" and can become basis of rejection of work on establishing the authorized disposition.

8.8.5 Non Conformance Report: Defective or uncompleted work shall not be paid. Such work shall also be notified to the Contractor within 10 days of submission of bill through non-conformance report (NCR). The NCR shall clearly identify the item of work that is non – conforming either to specification or to a specific requirement in the contract document. Once NCR is identified, it shall be evaluated and of the dispositions would be established.

a. "Do" Identifies the work which has not been done at all at site within specified time limit. An NCR issued with "Do" disposition for the work should immediately be undertaken by contractor.

b. "Re-Do" Identified the work, that is non conforming of all quality aspects. Such works be totally removed & redone.

c. "Re-work" Requires part of particular item identified in this category be reworked to bring it to the quality required.

d. "Use-as-is" Applied where Engineer accepts work "as-is" not withstanding the fact that it does not exactly conform to the contract requirements. This work shall be accepted only for agreed reduced rates with respect to unit rates quoted in financial bid by the contractor otherwise shall be re-classified under disposition "Do" or "Re-Do".

8.9 Payment Procedures

8.9.1 The contractor shall submit to the Engineer after the end of each month bill in two copies, each signed by authorized contractor's representative in standard format, showing the amounts to which the contractor considered himself to be entitled upto the end of the month. These bills should be prepared each indent wise.

- The Engineer after scrutiny of the bills shall certify and recommend the payments for completed accepted works within 14 days of presentation of bill to him to the employer subject to deductions as per bid documents.
- The employer shall pay the amount due to the Contractor under certificate and recommendations by the Engineer within 28 days after it has been delivered to the Employer.

8.10 Records & Documentation

8.10.1 The results of all inspections shall be documented. The test results containing documentary evidence of activities and data relevant to the quality of work and performance of the contractor shall also be documented. The field daily to be filled by Site Engineer of Contractor shall be a basic form of documentation. The activities to be entered in daily dairy are

- The description of day's activities, number and type of crew on job, equipment on job weather and temperature
- Any measurement made to determine pay quantities
- Daily summary of material issued in the job
- A record of significant conversations with and direction given to the contractor
- A record of bottlenecks with the progress or execution of the work
- A record of material testing in lab
- Details of visit by officials

8.10.2 The Contractor shall carryout road roughness measurement as directed by Engineer for the entire stretch at the end of the pavement maintenance and shall submit the

complete record to NHAI. There shall not be any separate payment on account of this. The payment pertaining to this shall be deemed to be included in the items of works.

8.11 MAINTENANCE INTERVENTION LEVELS

Following criteria shall be adopted by the Engineer while indenting the works.

Sl. No.	Defects	Criteria / Extent (% of sub section length)	Treatment / Action	Type of maintenance
1	Shoulder & Slopes			
1.1	Vegetation growth on shoulders & side slopes	Any kind	Vegetation growth be removed	Routine
1.2	Trees	a. All kind	Trim and remove dead / diseased branches	Routine
		b. Fallen trees on carriageway	Remove immediately	Urgent
1.3	Deformation or scour	a. Upto 50 mm	Fill & Compact	Routine
		b. More than 50 mm	Reconstruction	Recurrent / Urgent
1.4	Disturbed stone pitching	a. Upto 30 sqm.	Repair	Routine
		b. More than 30 sqm	Reconstruct	Urgent
2	Side drains			
2.1	Kuccha drains silted / too shallow	Any extent	Clean & repair	Routine
2.2	Standing water on shoulders / drains	Any	Realign to correct gradient and make shallow lateral drains	Routine
2.3	Silting in pucca side drains	Any extent	Clean out	Routine
2.4	Damages or scouring of pucca drains	Any extent	Repair and reconstruct to adequate size and shape	Routine
3	CD Works			
3.1	Silted or blocked openings	Any extent	De-silting / cleaning	Routine
3.2	Erosion / Scour in upstream / down stream	Any extent	Repair / fill the boulders	Periodic
3.3	Pot holes erosion in paved surface floor	Any extent	Repair with concreting	Periodic
3.4	Damaged crash barriers	Any	Reconstruct	Recurring / Urgent

3.5	Vegetation growth at inlet / outlet & near parapets	Any	Remove & Clear	Routine
3.6	Damaged masonry in parapets / substructure / superstructure	Any extent	Repair to match with existing & report to the Engineer	Recurrent
3.7	Painting exposed surfaces of bridge railings, kerb stones, parapets	Any	Repaint / White wash	Periodic
3.8	Cracks in structure	Any	Repair and report to the Engineer	Recurrent / Urgent
3.9	Leached, honey combed, spalled concrete surface, & exposed reinforcement	a. Upto 20 sqm	Repair with epoxy mortar or injected concreting	Urgent
		b. More than 20 sqm	Reconstruct	Urgent / Special alters
3.10	Checking of expansion joints	Any	Check &repair & clean	Periodic
3.11	Maintenance of bearings	Any (In case replacement of bearings is required, then specific report to be given to the Engineer)	Check & clean & carry ordinary maintenance	Periodic
4	Road Furniture			
4.1	Dirty road signs / delineators	Any	Wash & clean	Routine
4.2	Damaged / corroded road signs and delineators	Any	Repair, repaint or replace	Periodic
4.3	Missing road signs	Any	Replace	Routine
4.4	Damaged / missing median kerbs, boundary pillars, 200 m stone, km stone & 5th km stones	Any	Replace	Periodic
4.5	Painting & printing letters on road signs, km stones, 200 m stone, 5th km stones	Any	Repaint & print to match with existing	Periodic
4.6	Safety barriers, fencing	Any	Repair & repaint	Periodic
4.7	Pavement markings	a. Upto 30 sqm.	Repair	Recurring

		b. More than 30 sqm.	Repair	Periodic
5	Roadsidesafety / Miscellaneous			
5.1	Dead animals	Any	Remove and burry	Recurrent / Urgent
5.2	Broken down / accidental vehicle	Any	Inform traffic police and remove	Recurrent / Urgent
5.3	Road blockade	Any	Inform traffic police, remove blockade if reqd. construction temporary diversion	Recurrent / Urgent
6	Carriageway & Crust			
6.1	Stripping	a. <25 sqm.	Local sealing	Routine
		b. >25 sqm.	IInd coat surface dressing	Periodic
6.2	Rutting	a. depth of ruts < 50 mm		
		i. Crack < 10 mm	Seal the crack with slurry	Routine
		ii. crack > 10 mm	Surface dressing & fill ruts with bituminous mix	Recurrent
		b. depth of ruts > 50 mm		
		i. Crack < 10 mm	Seal the cracks with slurry and fill ruts with bituminous mix	Routine
		ii. crack > 10 mm	Surface coat surface dressing over cracked area to be followed by overlay	Periodic / Special attention
6.3	Pot holes	a. <20 mm	Patch repair to pot holes	Recurrent
		b. >20 mm	Patch repair to pot holes & check dressing of crust for strengthening if reqd.	Recurrent / Special Attention
6.4	Bleeding	a. < 25 sqm	Spread and roll over 6 mm size heated aggregates	Routine

		b. > 25 sqm	Apply surface dressing	Periodic
6.5	Cracks	a. < 25 sqm	Local sealing of cracks	Routine
		b. > 25 sqm	Local sealing followed by renewal	Periodic
6.6	Hungry surface	Any	Apply , slurry seal or fog seal	Recurrent
6.7	Corrugations	------	Cutting of high spots and filling of low spots with existing surfacing material and seal the surface	Recurrent
6.8	Shoving	------	Remove the material upto firm base and relay stable mix	Recurrent
6.9	Shallow depressions	------	Repair the depression with pre-mixed material	Recurrent
6.10	Settlements & upheaval	a. <20 sqm	Remove the weak / defective fill upto base & redo.	Recurrent
		b. >20 sqm	i. Remove the weak / defective fill upto base & redo ii. Strengthen the crust by providing additional layers	Periodic
6.11	Edge breaking & edge steps	a. <25 mm	Cut affected area and patch repair to road edge; with repair to unpaved shoulders also	Recurrent
		b. >25 mm	Reconstruct shoulders and repair to carriageway edge also	Periodic

NATIONAL HIGHWAYS AUTHORITY OF INDIA
(MINISTRY OF ROAD TRANSPORT & HIGHWAYS)

Short term improvements and Routine Maintenance of NH-2 from km.584.929 to km 651.576 of Palsit-Dankuni Section in the state of West Bengal for the period of four months

(Contract Package: O&M/NH-2/2021-22/Palsit-Dankuni)

Notice Inviting e-Tender,

NIT No. 15/2021-22/NH-2/O&M/Pal - Dan

BID DOCUMENT

Volume-II

The Chief General Manager (T)
National Highways Authority of India
Regional Officer-Kolkata, Synthesis Business Park,
Wing – C, 8th Floor, CBD/1, JL-23, Action Area –II,
New Town, Kolkata – 700156
Phone: 033-2324 8081
E-mail: rokolkatta@nhai.org, rokolnhai@gmail.com

Jan 2022

VOLUME - II

SECTION: IX

BILL OF QUANTITIES

The Appendix forms part of Bid. Bidders are required to fill up all the blanks in the form of Bid and Appendix thereto)

FINANCIAL BID FORM

To
The Chief General Manager (Tech),
Regional Office-Kolkata
National Highways Authority of India
Synthesis Business Park,
Wing – C, 8th Floor, CBD/1, JL-23, Action Area –II,
New Town, Kolkata – 700156

DESCRIPTION OF WORKS: Short term improvements and Routine Maintenance of NH-2 from km 584.929 to km 651.576 of Palsit-Dankuni Section in the state of West Bengal

Reference letter No. ……..

Dear Sir,

Having examined the site of works and Bid Documents, comprising Instructions to Bidders, Scope of works, Conditions of Contract, Technical Specifications, Bill of Quantities and schedules for the execution of the above named works, we, the undersigned offer to execute and complete such works and remedy any defects therein in conformity with the said bid documents for the sum of Rs. _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said Bid documents.

2. We undertake, if our Bid is accepted, to commence the work within ten (10) days of receipt of the order to commence, and to complete and deliver the sections and whole of the works comprised in the Contract within the period stated in the bid hereto.

3. If our Bid is accepted, we will furnish Performance Security (ies) in the form of a Bank Guarantee to be jointly and severally bound on us, in accordance with the Conditions of Contract.

4. We agree to abide by this Bid for the period of One Hundred & Twenty (120) days from the last date fixed for Bid Submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.

5. We confirm our agreement to treat the Bid documents and other records connected with the works as secret and confidential documents and shall not communicate information contained therein to any person other than the

person authorised by the Employer or use such information in any manner prejudicial to the safety and integrity of the works.

6. Unless and until an agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding Contract between us, but without prejudice to your right to withdraw such acceptance without assigning any reasons thereof.

7. We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this _____ day of _____ 20---

Signature _____ in the capacity of _____ duly authorised **

To sign Bid for and on behalf of

_____

(In block capital letters)

Address : _____

_____

Signature of Witness _____

Name of witness _____

Address of witness _____

_____

** Certified copy of Power of Attorney/authorization for signature shall be furnished by the bidder.

Bill of Quantities

9.00 Preamble

9.01 The Bill of quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Scope of Work and Specifications.

9.02 The quantities given in the Bill of quantities are estimated quantities. The basis of payment will be actual quantities of work indented and carried out and valued at the rates and prices tendered in the priced Bills of quantities, where applicable and otherwise at such rates and prices as the Engineer may fix with in the terms of Contract.

9.03 The rates and prices tendered in the priced Bill of Quantities shall include all equipment, plant, tools, spares, labour, supervision, overheads, consumables, materials, erection, maintenance, testing of input material delivered, profit, taxes and duties together with all general risks, liabilities and obligations set out and implied in the Contract and other incidentals to comply with the requirements of technical specifications and scope of work.

9.04 The rates and prices shall be quoted entirely in Indian Currency.

9.05 A rate or price shall be entered as a single rate as Tender Premium % above / below on the amount in General Abstract.

9.06 The whole cost of complying with the provisions of the contract shall be included in the items provided in the priced Bill of Quantities and where no rates are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.

9.07 The contractor shall keep the entire carriageway neat and clean throughout the contract period. The contractor shall maintain guard rails, railings, crash barriers, road furniture etc in good condition by cleaning them frequently as advised/ required by using suitable detergents/chemicals.
The staff of the contractor shall wear safety jackets, shoes, helmets etc. while on duty and any violation will attract a fine of Rs. 5,000/- for each incident.

Failure to erect safety signage or trying to carry out the works without proper precautions/safety measures as required will attract a fine of Rs. 5,000/- for each incident.

9.08 The Tendered rate for incident Management shall include all equipment, labour, material, consumable, tools, spares and other incidentals to comply with the requirement of the scope of the work and technical specifications.

9.09 General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. Reference to the relevant sections of the bidding document shall be made before entering rates or prices against each item in the Bill of Quantities.

Name of work:- Short Term Improvement and Routine Maintenance of Palsit to Dankuni (Km 584.929 to 651.576) Section of NH - 19 (Old NH - 2) in the state of West Bengal

PERIOD: Four Months

Item No.	Description of items	Unit	Quantity	Rate	Amount (in Rs.)
(1)	(2)	(3)	(4)	(5)	(6=4*5)
1.1	Maintenance of unpaved shoulders and slopes on both sides of the carriageway including the shoulders of service road, if any. It includes removal of Rank vegetation/weeds, Blading/grading at the required camber using motor grader, Providing spot reconditioning, reconstruction and regravelling to repair specific erosion or other damages for restoring the eroded area to originally constructed cross section on cuts and fills slopes/ shoulders conforming to Technical Specifications clause no. 3002, 3003. The work also include disposal of surplus material outside ROW and addition of selected soil conforming to Technical Specifications clause no. 305 brought from borrow areas located outside ROW. It includes cleaning of dust/dirt from existing MBCB/Guard Rail etc. with water and detergent within ROW. It also includes routine maintenance such as cleaning/straightening of all type of road signs including Gantries, road studs and delineators etc. and also removal of unauthorized boards within ROW including transportation to nearest suitable location and as directed by the Engineer-in-charge.	Km/Month	51.06	11177.15	5,70,749.99
1.2	Removal of rank vegetation/weeds and undesirable vegetation from Toe line of embankment slopes to ROW complete in all respect including breaking of clods,rough dressing and disposal of waste material and vegetation at a place outside ROW as per direction of Engineer-In-Charge.	Sqm	76596.00	2.16	1,65,447.36
1.3	Clearing road side/Median open lined/ pucca drains/covered drains/piped drains including Manholes, gratings, channels and Galis etc. of all sizes and bring them to original shape, drainage capacity incuding disposal of sediments, extraneous debris & vegetation growth blocking the free flow from site outside ROW with all leads and lifts complete in all respects as directed by the Engineer in charge and as per Additional Maintenance Standard clause no. 6.12.1. (Frequency of cleaning in urban areas will be quarterly whereas in rural areas it will be twice in year i.e. before and after monsoon).	RM	25532.00	30.57	7,80,513.24

1.4	Carrying out proper cleaning, and removing of dust/silt/thrash /plastic/rubbish/garbage/waste from the carriageway, foothpaths, verges (excluding the verges of central median) by mechanical brooms established with vehicle tracking system and manually if required and as directed by the Engineer-in-charge. The payment will be made as per the report of vehicle tracking system indicating the location and kilometers travelled and number of passes on that stretch covering the full kilometer. The cleaning includes full width of both sides of carriageway and service road, if any and confirming to 6.10 of Scope of Work of Section-6 and as directed by the Engineer-in-charge. The payment will be deducted proportionately as per the report of VTS.				
A)	Rural area (Frequency of cleaning will be quarterly).	km/month	51.06	1967.96	1,00,491.91
1.5	Providing treatment and repair to pot holes/ patch repair of all types of bitumen pavement by using bitumen emulsion complying with IS 8887 of a type and grade approved by Engineer in charge complete as per technical specification Clause 3004.2, IS 8887 and 507 as per approval and direction of Engineer in charge.				
(a)	Carrying out patch repair with bitumenous concrete **up to 50 mm thickness** after removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides & base of excavation as per clause no. 503, back filling the patch with bitumenous concrete prepared by using bitumen emulsion complying with IS 8887 and other material detailed as per clause no. 507. Compacting trimming & finishing the surface to form a smooth continuous surface all as per clause no. 3004.2 of Technical Specification.	Sqm	78191.75	509.39	3,98,30,095.53
(b)	Filling potholes and patch repair with bitumenous concrete **beyond 50 mm thickness** after removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides & base of excavation as per clause no. 503, back filling the patch with bitumenous concrete prepared by using bitumen emulsion complying with IS 8887 and other material detailed as per clause no. 507. Compacting trimming & finishing the surface to form a smooth continuous surface all as per clause no. 3004.2 of Technical Specification.	Sqm	4468.10	1018.78	45,52,010.92

1.6	Milling of distressed bituminous(depth upto 100 mm) surface to required depth using milling machine fitted with loading conveyor for loading the milled material directly on to trucks for safe disposal with all leads and lifts complete in all respect as directed by Engineer-In-Charge. The rate quoted shall be inclusive of the rebate for the solvage value of the milled material.	Sqm	4468.10	42.02	1,87,749.56
1.7	**Tack Coat** Providing and applying tack coat with paving bitumen of VG-10 grade conforming to IS:73 using emulsion pressure distributor on the prepared bituminous/granular /cement concrete pavement surface cleaned with mechanical broom and high pressure air jet (Reference to MORT&H's specification clause 503).	Sqm	4468.10	12.07	53,929.97
1.8	**Repair of RCC Railing** Carrying out repair of RCC M30 railing to bring it to the original shape.	RM	14.00	164.17	2,298.38
2.1	Maintenance of median and the existing plants in it (with a density of 333/666 plants per km. depending upon the width of the Median) by basin making, weeding-hoeing, cleaning, levelling and dressing of median, uprooting and removal of weeds, cutting grass, disposal of all muck outside ROW regularly to keep the median clean and plantation in healthy and good condition. The job also includes the cleaning and removal of spilled over earth from median to main carriageway in the portion adjacent to the kerbs all along the median besides cleaning of longitudinal and cross drains in the median. The operation of maintenance in addition to above will also cover and include the following activities:-				
(a)	Watering of each plant as and when required depending upon the climatic conditions of the locality/ region/ season/ strictly as per direction of Engineer in Charge. The main requirement is to keep the plants/ shrubs in healthy, good and surviving condition. The casuality / damage to any plant/shrubs during the maintenance period will be the entire responsiblity of the contractor and the contractor shall replace the dead & damaged plants/shrubs at his own cost with new plants of the same species, varieties, age and size etc	km/month	25.53	9023.69	2,30,392.85
(b)	Application of FYM or Sludge @ 1/2 cuft or 10 Kg/Plant two times a year during February / March and October/ November plus 20 grams of NPK (12:32:16) or Bonemeal per plants two times a year as detailed above.				

(c)	Application of insecticide / pesticide/ fungicide etc for control of insects pests and diseases as and when required as per direction of Engineer.				
(d)	Training and pruning of all shrubs /plants as and when required to give them required shape, size and spread.				
(e)	Replacement of dead, damaged plants from the median by healthy & well developed plant of similar species, varieties, age and size etc. within 10 days of occurrence of casuality as noticed/ reported or as directed by the Engineer. In case, plant is not replaced as specified above, a penalty of Rs.1000/- per plant will be imposed.				
3.1	Removing all types of broken down/vehicles which have met with accidents from the carriageway and toeing the same to proper locations i.e. nearest Police stations or some suitable location by using 15 tonne or of more capacity pick and carry **Crane**, as per clause 4.4 of Scope of Work and as per Clause 4.8 'Performance Standard' of scope of work.	Per Month	4.00	84000.00	3,36,000.00
3.2	Providing and supply of Following manpower for misc. work as when required basis as per instruction of the Engineer.	Man Days			
A	Mate/ Supervisor	Per Day	120.00	1294.32	1,55,318.40
B	Mazdoor (skilled)	Per Day	120.00	414.40	49,728.00
C)	Electrician	Per Day	30.00	776.93	23,307.90
3.3	Providing, running and maintaining **Route Patrol Vehicle** as per clause 6.4 of scope of work and as per clause 6.8 'Performance Standard' of scope of work. It also includes removal of dead animals lying on highways and burrying them at propoer safe location out of ROW. It will be incidental to this work. Payment will be made as defined in Clause 6.8 of Scope of Work.	Each Vehicle Per Month	4.00	120000.00	4,80,000.00
3.4	Provision of **Ambulance** as per clause 4.4 of scope of work and as per clause 4.8 'Performance Standard' of scope of work.	Each Vehicle Per Month	4.00	106270.50	4,25,082.00
3.5	Setting up of **control room (24x7)** along the higway with round the clock depoloyment of atleast one Manager. Phone Nos. of control room will be displayed on the highway at every 5 km. It will coordinate all the acitivities of incident management vehicles. It will maintain / generate VTS report and other reports related to incident management operations.	Per Month	4.00	57881.25	2,31,525.00

3.6	Providing Following equipments in running condition on hire basis including running and maintenance charges as per instructions of the Engineer including P.O.L. complete as per specification.(Rate for net working hours at site)				
(c)	JCB	Per Hour	40.00	1604.47	64,178.80
TOTAL AMOUNT					**4,82,38,819.81**
TOTAL AMOUNT (SAY)					**4,82,38,820.00**