

File No.RW/G-23012/01/2019-W&A(Pt.III)

**Government of India**  
**Ministry of Road Transport & Highways**  
**(Planning Zone)**

Transport Bhawan, 1, Parliament Street, New Delhi - 110001

Dated the 15<sup>th</sup> January, 2021.

To

1. The Principal Secretaries/ Secretaries of all States/UTs Public Works Department dealing with National Highways, other centrally sponsored schemes.
2. All Engineers-in-Chief and Chief Engineers of Public Works Departments of States/ UTs dealing with National Highways and other centrally sponsored schemes.
3. The Chairman, National Highways Authority of India, G-5&6, Sector-10, Dwarka, New Delhi-110075.
4. The Managing Director, NHIDCL, PTI Building, New Delhi-110001
5. The Director General (Border Roads), Seema Sadak Bhawan, Ring Road, New Delhi-110010.

**Sub: - Contract Document for Medium Term maintenance of NHs - Reg.**

**Ref: - Ministry's letter of even no. dated 23.11.2020.**

Sir,

Please refer to the Standard Operating Procedure (SOP) for PR / IRQP works and OR works for Maintenance & Repair (M&R) of NHs issued vide letter under reference.

2. The Contract Document for Medium Term maintenance of NHs for at least three years shall be based on the modifications to IRC:SP:124-2019 (Model Contract for Maintenance of Roads (Based on Single Percentage Rate)) enclosed at **Annexure-I** with immediate effect and until further orders.
3. Implementation of immediate restoration works for Flood Damages, etc., on the stretches of NHs, on which maintenance contracts have already been assigned, may be got executed as a variation to such ongoing contracts under OR (DPP) as per inter-se priority and availability of allocations subject to prior approval of overall enhancement of such ceilings of works and annual phasing of expenditures for the State. Allocations for such works may not be made under FDR(N).
4. Considering that medium term maintenance contracts shall be awarded on NH stretches requiring only minor repairs (such as pothole and patch repairs, etc.) and on which improvement / PR / IRQP works may not be done within next three (3) year period, incident management (viz. route patrols, ambulances, tow away vehicles, etc.) should also be part of the contract. However, such provisions shall be made for NHs stretches (either in contiguity or separated by 20 km maximum on the same NH or different NHs) of at least 60 km or more; suitable bundling of sections of same / different NHs may accordingly be made. In case it is not feasible to bundle NHs sections to suit the requirements, provisions for incident management may be deleted with specific prior approval of Competent Authority.
5. Incident management shall be coordinated through Control centres/ Telephone operators managed through IHMCL, for which separate SOP shall be issued.

6. Criteria for estimation of rates & quantity of usage of Road Survey using Network Survey Vehicle (NSV) and Bridge Inspection using Mobile Bridge Inspection Unit (MBIU) (wherever considered necessary) have been enclosed at **Annexure-II** for guidance purpose for invitation of bids.
7. Guiding principles for bridge inspection is enclosed at **Annexure-III**.
8. Specifications of standard NSV is enclosed at **Annexure-IV**.
9. This issues with the concurrence of Finance Wing vide U.O. No. Note #17, dated 31.12.2020 and approval of Competent Authority.

Enclosure: As above



(A Maulik)

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Copy to:

1. All CEs in the Ministry of Road Transport & Highways
2. All ROs of the Ministry of Road Transport & Highways
3. The Secretary General, Indian Roads Congress
4. Technical circular file of S&R (P&B) Section
5. NIC-for uploading on Ministry's website under "What's new"

Copy for information and necessary action to:

1. PS to Hon'ble Minister (RT&H)
2. PS to Hon'ble MOS (RT&H)
3. Sr. PPS to Secretary (RT&H)
4. Sr. PPS to DG (RD) & SS
5. Sr. PPS to AS&FA
6. Sr. PPS to Pr. CCA, MoRT&H
7. Sr. PPS / PPS / PS to ADG-I/II/III/IV
8. Sr. PPS / PPS / PS to JS (H)/ JS (NHIDCL)/ JS (Toll) / JS (LA&C)



**Annexure - I**

Enclosure to Ministry's letter no. No.RW/G-23012/01/2019-W&A(Pt.III) dated 15.01.2021.

**Contract Document for Medium Term (at least Three years) maintenance of NHs - Reg.**  
The modifications to IRC:SP:124-2019 (Model Contract for Maintenance of Roads (Based on Single Percentage Rate)) shall be:-

- (i) Section-1, Notice Inviting Tender:- For the row corresponding to Sl. No. 1 in Table,

For	Read
Maintenance works and activities on section from ____ to ____ (km. ____ to km. ____) of [name of NH/SH/MDR/Rural Road] in the State of ____	Maintenance works and activities (including incident management) on section from ____ to ____ (km. ____ to km. ____) of [name of NH] in the State of ____

- (ii) Section-1, Notice Inviting Tender:-

For	Read
<p>(1).....Cost of Bid Documents (Non-Refundable): Rs._____</p> <p>E-Tender Processing Fee (Non-Refundable): Rs._____ (through e-payment gateway of _____ Bank using Credit Card/ Debit Card - Master Card and Visa Card only).</p> <p>(4) To participate in the e-Bid submission, it is mandatory for the bidders to have user ID &amp; password which has to be obtained by submitting an annual registration charges of Rs.____+GST@____to M/s _____ through e-payment gateway of _____ Bank using Credit Card/ Debit Card - Master Card and Visa Card only. The registration obtained, as mentioned above shall be valid for one year from date of its issuance and be subsequently renewed. The bidder shall be able to participate in e-tendering of any project of _____. Bidder shall obtain such user ID and password in its own name.</p>	<p>(1).....Cost of Bid Documents (Non-Refundable): Rs._____</p> <p>E-Tendering Processing Fee (Non-Refundable): NIL</p> <p>(4) To participate in the bidding, it is mandatory for the Bidders to get registered their firm with e-procurement portal <a href="https://eprocure.gov.in/eprocure/app">https://eprocure.gov.in/eprocure/app</a> to have user ID &amp; password which has to be obtained free of cost. Following may kindly be noted:</p> <p>(a) Registration with e-procurement portal should be valid at least up to the date of submission of BID.</p> <p>(b) BIDs can be submitted only during the validity of registration.</p> <p>The Bidders shall update their project and other details on the portal on a regular basis and apply to the tenders via the portal.</p> <p>Bidders are also required to get registered their firm with Bidder Information Management System (BIMS) Portal.</p>

For	Read												
<p>(5) .....To participate in bidding, bidder shall pay cost of Bid Document (Non-refundable) in the form of Demand Draft favouring "_____"payable at ____ and Tender Processing fee (Non-refundable) in favour of M/s____, through e-payment gateway of ____ Bank using Credit Card/ Debit Card - Master Card and Visa Card only.</p>	<p>(5) The complete BID document can be viewed / downloaded from official portal of the CPPP website (eprocure.gov.in/eprocure/app) and BIMS portal (bims.gov.in) from ____ to ____ (upto 17.00 Hrs. IST). The amendments/ clarifications to the Bid Document, if any, will be hosted on the above website.</p> <p>The bidder is required to submit, along with its BID, the cost of BID/RFP document, i.e. Rs. ____ (Rupees ____ only), to Employer's account through Bharat Kosh, as mentioned below:</p> <table><tr><th>S. No.</th><th>Particulars</th><th>Details</th></tr><tr><td>1.</td><td>Link of Bharat Kosh</td><td>bharatkosh.gov.in</td></tr><tr><td>2.</td><td>Pay and Accounts Officer (PAO)</td><td>_____</td></tr><tr><td>3.</td><td>Drawing and Disbursing Officer (DDO)</td><td>_____</td></tr></table>	S. No.	Particulars	Details	1.	Link of Bharat Kosh	bharatkosh.gov.in	2.	Pay and Accounts Officer (PAO)	_____	3.	Drawing and Disbursing Officer (DDO)	_____
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<p>(8) The last date for online submission of the Bid is ----- upto ..... hrs (as mentioned on the e-portal only) ("Bid Due Date"). The bids would be opened on ----- at ..... hrs. online at -----, representatives of the bidders (maximum of two) who choose to attend, may attend the online opening of the bids at ----- 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.</p>	<p>(8) The last date for online submission of the Bid is ----- upto ..... hrs (as mentioned on the e-portal only) ("Bid Due Date"). Bidder must submit its Financial Bid and Technical Bid on CPPP e-procurement portal within the above deadline. Bidder must also submit Technical Bid on BIMS Portal within the specified deadline.</p> <p>The bids would be opened on ----- at ..... hrs. online at -----, representatives of the bidders (maximum of two) who choose to attend, may attend the online opening of the bids at ----- 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.</p>												

(iii) Section-2, Instructions to Bidders (ITB) and Appendix to ITB:-



Existing	Replace with
<p>(12.2) .....Though, the scanned copies of following documents is required to be uploaded during submission of e-bid on the e-tendering portal, as per Clause 12.1 above, however, following original documents in physical form shall be submitted in a sealed envelope on or before the Bid Due Date and before the time of submission as specified in NIT at the address indicated in Clause 20, duly superscribed "Name of Work, Bid Due Date and time". Name and address of the bidder should also be indicated on the envelope.</p> <ul style="list-style-type: none"> <li>i) Copy of Acknowledgement for Tender Submission and EMD/Bid Security</li> <li>ii) Bid Document Fee</li> <li>iii) Tender Processing Fee</li> <li>iv) Written Power of Attorney of the signatory (whose digital signature certificate is used during e-tender submission) of the bidder to commit the Bid.</li> <li>v) Affidavit duly notarized (as per the format provided in Section-3)</li> </ul>	<p>(12.2) .....Though, the scanned copies of following documents is required to be uploaded during submission of e-bid on the e-tendering portal and BIMS Portal, as per Clause 12.1 above, however, following original documents in physical form shall be submitted in a sealed envelope on or before the Bid Due Date and before the time of submission as specified in NIT at the address indicated in Clause 20, duly superscribed "Name of Work, Bid Due Date and time". Name and address of the bidder should also be indicated on the envelope.</p> <ul style="list-style-type: none"> <li>i) Copy of Acknowledgement for Tender Submission and Bid Securing Declaration</li> <li>ii) Bid Document Fee</li> <li>iii) <b>Deleted</b></li> <li>iv) Written Power of Attorney of the signatory (whose digital signature certificate is used during e-tender submission) of the bidder to commit the Bid.</li> <li>v) Affidavit duly notarized (as per the format provided in Section-3)</li> </ul>

(iv) Section-2, Instructions to Bidders (ITB) and Appendix to ITB:-

For	Read
<p>(15.1) Bids shall remain valid for a period of 90 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.</p>	<p>(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.</p>

(v) Section-2, Instructions to Bidders (ITB) and Appendix to ITB:-

For	Read
<p><b>(16) Earnest Money/ Bid Security/ Forfeiture/ Debarment</b></p> <p>(16.1) The bidder shall furnish, as part of the Bid, Earnest Money/ Bid Security, in the amount as specified in the NIT. (Bank guarantee/ demand draft must be in favour of the Employer).</p>	<p><b>(16) Bid Securing Declaration</b></p> <p>(16.1) A Bidder is required to submit, along with its BID, a Bid Securing Declaration.</p> <p>(16.2) The Bidder has to sign a Bid Securing Declaration accepting that if the Bidder withdraws or modifies its bid during the period of validity i.e.</p>



For	Read
<p>(16.2) The Earnest Money shall, at the Bidder's option, be in the form of Bank Guarantee/ Demand Draft only (the other forms will not be acceptable) of any scheduled commercial bank approved by RBI having a net worth of not less than Rs.500 crore as per the latest annual report of the bank and must be in the name of Employer.....It shall be valid for 45 days beyond the validity of the bid. Any bid having bid security for lesser value and shorter validity period shall be treated as non-responsive.....</p> <p>(16.3).....</p> <p>(16.4).....</p> <p>(16.5).....</p> <p>(16.6).....</p> <p>(16.7)In case of forfeiture of bid security, the bidder shall also be debarred from participation in the works of [---] for a period as decided by [---]</p>	<p>not less than 180 (one hundred eighty) days from the bid due date or if the bidder is awarded the contract and fails 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 from participation in the tendering process for the works of MoRTH/ NHAI/ NHIDCL and works under Centrally Sponsored Schemes, for a period of one year from the bid due date of this work. The Bid Securing Declaration shall be submitted as per the format at Section 4 (Format for Bid Securing Declaration)</p>

(vi) Section- 2, Instructions to Bidders (ITB) and Appendix to ITB:-

For	Read
<p>(28.2) If the Bid of the successful Bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in <b>Clause 33</b> be increased and an additional Performance Security may be obtained at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract. The amount of the additional increased Performance Security as decided by the Employer shall be final, binding and conclusive on the bidder.</p>	<p>(28.2) If the Bid of the successful Bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. If, after evaluation of the price analyses, the Employer determines that the bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Employer may reject the bid/proposal.</p>

(vii) Section-2 Instructions to Bidders (ITB) and Appendix to ITB: -



For	Read
<p><b>(32) Performance Security</b></p> <p>(32.1) Within 10 (ten) days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer, a Performance Security of Five percent of the Contract Price plus any additional security for unbalanced Bids in accordance with ITB Clause 28.2, valid for the period of 28 days after the expiry of defect liability period and sign the contract. The validity shall account for additional 3 months' time for Bank Guarantee verification, signing of contract and start date.</p> <p>(32.2) 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 in case of Earnest Money/Bid Security.</p> <p>(32.3) Failure of the successful bidder to comply with the requirement of ITB Clause 32.1 shall constitute sufficient ground for cancellation of the award and forfeiture of the Bid Security and debarment for a period as specified in ITB Clause 16.7.</p>	<p><b>(32) Performance Security</b></p> <p>(32.1) Within 10 (ten) days of receipt of Letter of Acceptance, the selected Bidder shall furnish to the Employer an irrevocable and unconditional guarantee from a Bank in the form set forth in Section 4 (Form of Bank Guarantee for Performance Security) for an amount equal to 5% (five percent) of the Bid Price.</p> <p>A. Bank Guarantee, in the name of the Employer, from following banks would be accepted: -</p> <ul style="list-style-type: none"> <li>i) State Bank of India or its subsidiaries,</li> <li>ii) Any Indian Nationalised Bank</li> <li>iii) IDBI/ICICI Bank</li> <li>iv) A Foreign Bank (issued by a branch outside India) with a counter guarantee from SBI or its subsidiaries or any Indian Nationalised Bank.</li> <li>v) Any Scheduled Commercial Bank approved by RBI having a net worth of not less than Rs. 500 crore 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.</li> </ul> <p>B. The acceptance of the guarantees shall also be subject to the conditions that the capital adequacy of the Bank shall not be less than the latest norms prescribed by RBI.</p> <p>C. The bank guarantee issued by a Cooperative Bank shall not be accepted.</p> <p>(32.2) The Performance Security shall be valid until 60 (sixty) days after the Defects Liability Period.</p> <p>(32.3) For avoidance of any doubt, in case of failure of submission of Performance Security within the stipulated time period, the award shall be deemed to be cancelled/ withdrawn. Thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of the Award shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and the Award shall be deemed to have been withdrawn by the Employer.</p> <p>(32.4) The agreement will be executed within 10 days of receipt of Performance Security.</p>



For	Read
	(32.5) Notwithstanding anything to the contrary contained in this RFP, Performance Security for an amount equal to 3% (three percent) of the Bid Price shall be applicable for all tenders/contracts issued till 31.12.2021, in accordance with DoE's OM No. F.9/4/2020-PPD dated 12.11.2020. Rate of Performance Security to be adopted for Contracts finalized after 31.12.2021 shall be governed by applicable policies at that period.

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<table><tr><th>S. No.</th><th>Project Length for maintenance</th><th>No. of Mobile Units*</th></tr><tr><td>1</td><td>Up to 50 km</td><td>1</td></tr><tr><td>2</td><td>More than 50 km and up to 150 km</td><td>2</td></tr><tr><td>3</td><td>More than 150 km and up to 300 km</td><td>3</td></tr></table>	S. No.	Project Length for maintenance	No. of Mobile Units*	1	Up to 50 km	1	2	More than 50 km and up to 150 km	2	3	More than 150 km and up to 300 km	3																																																																																							
S. No.	Project Length for maintenance	No. of Mobile Units*																																																																																																	
1	Up to 50 km	1																																																																																																	
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3	More than 150 km and up to 300 km	3																																																																																																	
2. ** Sensor Paver	1																																																																																																		
3. * *Vibratory Roller (8/10 T)	1																																																																																																		
4. Static Roller (8/10 T)	1																																																																																																		
5. Small Roller/Compactor	1																																																																																																		
6. Bitumen/emulsion sprayer	1																																																																																																		
7. Mechanical Broom (1250 sqm per hour)	1																																																																																																		
8. Air compressor	2																																																																																																		
9. Grader/Backhoe loader	1																																																																																																		
10. Water Tanker	2																																																																																																		
11. Dewatering Pumps	2																																																																																																		
12. Tipper/dumper Truck	2																																																																																																		
13. Mini hot mix plant (6/10 T/Hr capacity) with indirect heating arrangements	1																																																																																																		
14. Hot Mix Plant	1																																																																																																		
15. String line set	1																																																																																																		
16. Network Survey Vehicle (NSV) having Laser Profilometer (LP), Transverse Profile Logger (TPL), Running distance measurement instrument (RDMI), DGPS for recording spatial coordinates, at least 2 HD Video Cameras for recording road inventory and road condition in																																																																																																			



For	Read
	<p>accordance with Ministry's extant policy (Ref. Circular No. RW/NH-33044/32/2019-S&amp;R(P&amp;B) dt 13.11.2019 and its amendments from time to time) 1</p> <p>17. #Mobile Bridge Inspection Unit (MBIU) for carrying out pre-monsoon and post-monsoon inspection of bridges 1</p> <p>(# to be deployed, wherever necessary, as decided by RO MORT&amp;H and State PWD)</p> <p>18. Rescue Ambulance as per standard specifications \$</p> <p>19. Route Patrol Vehicle as per standard specifications \$</p> <p>20. Tow Away Crane/Vehicle as per standard specifications \$</p> <p>(\$ - Nos. of vehicles to be deployed is to be decided depending upon length of NHs stretch)</p>

(ix) In the Section-4, "Forms of Bank Guarantees, Letter of Acceptance (LOA) and Agreement", Form of Bank Guarantee for Bid Security shall be replaced with Format for Bid Securing Declaration, as detailed below:-

**BID SECURING 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 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 Section 2 of the Request for Proposal (RFP), then [Name of the bidder] will be suspended for participation in the tendering process for the works of MoRTH/NHAI/NHIDCL and works under other Centrally Sponsored Schemes, for a period of one year from the bid due date of this work.*

(Signature of the Authorised Signatory)  
(Official-Seal)

(x) Section-4, Forms of Bank Guarantees, Letter of Acceptance (LOA) and Agreement:-

For	Read
<b>FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY</b> .....This guarantee shall be valid until 28 days from the date of expiry of the Defects Liability Period.....	<b>FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY</b> .....This guarantee shall be valid until 60 days from the date of expiry of the Defects Liability Period.....

(xi) Section-5, General Condition of Contract (GCC), A-General, 1-Definitions:-

For	Read
<b>Road Maintenance Works and Activities to be carried out by Contractor shall include:</b> Maintenance of the road assets and incident management specified in the BOQ and executing other items of road maintenance works as ordered by the Engineer.	<b>Road Maintenance Works and Activities to be carried out by Contractor shall include:</b> Maintenance of the road incident management specified in the BOQ and executing other items of road maintenance works as ordered by the Engineer.

(xii) Section-5, General Condition of Contract (GCC), A-General, 1-Definitions:-

For	Read
<b>Rectification Standard:</b> The Contractor shall maintain the Road Assets in proper condition that comply with the Road Maintenance Standards and ensure road users safety and comfort. The maintenance activities shall be so planned that the defects are repaired well before they reach maximum condition as per the permissible tolerance.	<b>Rectification Standard:</b> The Contractor shall maintain the specific parts of the road aspects as specified in BOQ or as ordered by Engineer in charge and ensure road users safety and comfort. The maintenance activities shall be so planned that the defects are repaired well before they reach maximum condition as per the permissible tolerance.

(xiii) Section-5, General Condition of Contract (GCC), C-Quality Control:-

For	Read
(31.4) The Defects Liability Period shall be as given in the Contract Data, counted from the Date of Completion stated in the Certificate of Completion issued in pursuance of Clause 47. The defect liability period is not applicable for works of routine maintenance such as pot holes/ patch repairs/ ruts repairs under performance based BOQ item.	(31.4) The Defects Liability Period is not applicable for works of routine maintenance such as pot holes/ patch repairs/ ruts repairs/ cleaning and clearing, etc. under performance based BOQ item. However, for other specific items of works (if any), got executed as ordered by Engineer (if any), the Defects Liability Period shall be 36 months,



For	Read
	counted from the Date of Completion stated in the Certificate of Completion issued in pursuance of Clause 47.

(xiv) Section-5, Contract Data, Item No. 8:

For	Read
The limit of subcontracting is 50% of initial contract price.	The limit of subcontracting is NIL of initial contract price.

(xv) Section-5, Contract Data:

For	Read
16. The Defect Liability Period will be 36 months for periodic renewal and other improvement works.	16. The Defect Liability Period will be 36 months for periodic renewal and other improvement works executed (if any)

Additional Technical Personnel (Ref. Item No. 10) for inspection of bridges

S. No.	Personnel	Qualification	Particular Experience (minimum requirement)	No. of Persons
5	Bridge Engineer	Degree in Civil Engg	5 years total on Highway / Bridge Construction / Maintenance / Design with at least 2 years on MBIU operations	1 (not full time); estimated involvement in project during entire contract duration – [12 months*]

\* - for guidance purpose; to be estimated by RO (MoRT&H) in consultation with CE(NH), State PWD on a case to case basis

(xvi) Section-7, Road Maintenance Standards and Specifications for Road Maintenance Works, Part-I:

For	Read
(2.2) (i) The Contractor shall set up and maintain an Incident Management System (IMS) and supply regular incident statistics to the Employer. Incident Management System entails a set of coordinated activities.....	(2.2) (i) The Contractor shall set up and maintain an Incident Management System (IMS) and supply regular incident statistics to the Employer. Operation of ambulance services, patrol vehicles and tow away cranes shall be synchronised with toll-free no. 1033 or any other no. applicable.  Incident Management System entails a set of coordinated activities.....

(xvii) Section-9, Financial Bid Form and Bill of Quantities, Bill of Quantities (BOQ):-

The suggestive BOQ should be broadly as mentioned below, the item nos. mentioned here are of IRC:SP:124-2019; additionally, a new table of BOQ (Bill No. 4) has been added, pertaining to provisions for road survey using Network Survey Vehicle and bridge inspection:-

BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
1.1	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 <b>Clause no. 3002.</b> Fill material should be brought from borrow areas located outside ROW conforming to Technical Specification no. 305. Watered and well compacted with plate compactor or power rammer with all leads and lifts as directed by the Engineer (Quantity of compacted Fill material to be measured on cross sectional area basis)	Cum				
1.2	Providing repair to stone pitching/ apron over the filter media/ drainage layer at scattered locations over the slopes of guide bunds, river training works, and road embankments as per Technical Specifications <b>Clause no. 2504</b> complete in all respects as directed by Engineer involving the below given operations however as per its actual applicability at site.					
	i) Providing and laying 200 mm granular material filter conforming to MoRTH Specifications <b>Clause no.</b>	Cum				



BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
	<b>2504</b> complete in all respects as per directions of Engineer-In-Charge.					
	ii) Providing repair to damaged stone pitching/ apron over the prepared surface as per technical Specifications <b>Clause no. 2504</b> complete in all respects as per directions of Engineer.					
	a) Using boulders available at site (The job includes removal and stacking of boulders from damaged location).	Cum				
	b) Using material procured by the agency.	Cum				
1.4	Providing repair to grouted stone pitching with 1:3 cement sand mortar over the already prepared surface/ slopes of guide bunds, river training works, and road embankments as per MoRTH Section 2500 complete in all respect as directed by the Engineer.					
	a) Using stone available at site (The job include removal, cleaning and stacking of stone from the damage locations)	Cum				
	b) Using material procured by the agency.	Cum				
1.6	Clearing cleaning, deepening and reshaping of roadside unlined/ kaccha drains and making shallow kaccha lateral drains on shoulders wherever required, including removal and disposal of sediments, extraneous debris and vegetation growth blocking the free flow from site <b>outside ROW</b> with all leads and lifts complete in all respects as directed by the Engineer- In-Charge and as per Maintenance Standard					Limited quantity to be operated as per the actual site requirement and availability of funds as decided by the Engineer.

BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
	<b>Clause no. 3.1</b> (Frequency of cleaning in urban areas will be quarterly whereas in rural areas, it will be twice in a year i.e. before and after monsoon).					
	a) Drains having depth upto 0.6 meter	RM				
	b) Drains having depth more than 0.6 meter	RM				
1.7(A)	Clearing road side/Median open lined/ pucca drains to bring them to original shape, <b>drainage capacity including disposal of sediments, extraneous debris and 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 Maintenance Standards Cause no. 3.1</b> (Frequency of cleaning in urban areas will be quarterly whereas in rural areas, it will be twice in a year i.e. before and after monsoon).					Limited quantity to be operated as per the actual site requirement and availability of funds as decided by the Engineer.
	a) Drains having cross-sectional area upto 0.3 Sqm	RM				
	b) Drains having cross-sectional area more than 0.3 Sqm	RM				
1.7(B)	Clearing longitudinal and transverse covered drains and pipe drains <b>including manholes, gratings, channels and gullies etc.</b> and bringing them to original drainage capacity, including <b>disposal of sediments, extraneous debris and vegetation growth blocking the free flow from site outside ROW with all leads and lifts complete in all respects</b> as directed by the Engineer and as per Maintenance Standards	RM				Limited quantity to be operated as per the actual site requirement and availability of funds as decided by the Engineer.



BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
	<b>Clause no. 3.1. The job also includes</b> removing and refixing of precast slab in original position, (Frequency of cleaning will be as per site requirement however limited to twice in a year).					
1.8	Clearing slab/ box type culverts and pipe culverts including clearing, cleaning and reshaping of upstream and downstream faces of these culverts within right of way. The job includes disposal of excess material recovered from site including vegetation outside ROW with all leads and lifts complete in all respects as per direction of Engineer-In-Charge and as per Maintenance Standards <b>Clause 3.1</b> (Frequency of cleaning will be one time in a year i.e. before start of monsoon).					
	a) Slab/ Box Type Culverts	No.				
	b) Pipe Culverts	No.				
1.10	Removal of rank vegetation/ weeds and undesirable vegetation from shoulders, embankment slopes upto ROW (both sides) complete in all respects 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 and as per Maintenance Standards <b>Clause 3.3</b> (Frequency will be once in a quarter).					Limited quantity to be operated as per the actual site requirement and availability of funds as decided by the Engineer.
	a) Shoulders including side slopes of embankment upto toe line on both sides of the carriageway. (Frequency of cleaning will be four times in a year; however limited to only areas prone to growth	Sqm				

BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
	of rank/ undesirable vegetation and weeds).					
	b) From Toe line of embankment slopes of ROW on both sides of the carriageway (Frequency of cleaning will be two times in a year; however limited to only areas prone to growth of rank/ undesirable vegetation and weeds).	Sqm				
1.11 (A)	Providing slurry seal for filling of hair cracks, surface cracks and preventive/ renewal treatment as per MoRTH Specification <b>Clause 512.</b>					
	a) Filling hair cracks	Sqm				
	b) Filling of Surface cracks 1-3 mm and preventing/ renewal treatment.	Sqm				
	c) Filling of surface cracks 1-3 mm and preventing/ renewal treatment.	Sqm				
1.11 (B)	Providing and applying low viscosity bitumen emulsion for sealing cracks less than 3 mm wide or incipient fretting or disintegration in an existing bituminous surfacing complete as per MoRTH Specifications <b>Clause 3004.3.2</b> and as per direction of the Engineer-in-Charge (Fog seal).	Sqm				
1.11 (C)	Providing sealing to cracks wider than 3 m complete as per Technical Specifications <b>Clause no. 3004.3.3</b> and as per satisfaction of the Engineer-In-Charge.	Sqm				
1.12	Providing treatment to bleeding bituminous surface by uniform spreading of crusher dust/ other fine graded material as per <b>Clause 3004.4</b> of Technical Specifications complete in all respects and as per direction of Engineer-In-Charge.	Sqm				



BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks
1.17	Applying Epoxy mortar over leached honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specifications <b>Clause 2804</b> and as per approval of the Engineer.	Sqm				Limited quantity to be operated as per the actual site requirement and availability of funds as decided by the Engineer. Any variation in quantity for taking care of Special Repair (SR) requirements may be included through a separate sanction/ approval as per the extant policy guidelines.
1.19	Cement plaster/ repair to cement plaster in thickness 12-20 mm in cement mortar 1:4 on all types of masonry works in superstructure/ substructure at any height as per MoRTH Specifications <b>Clause No. 1000, 1300 and 1400.</b>	Sqm				
1.23	Providing, laying and compacting <b>Dense Graded Bituminous Macadam</b> complete as per Technical Specification <b>Clause no 505</b> including tack coat as per Technical Specifications <b>Clause no. 503.</b>	Cum				It may not be allowed in general, except under special circumstances. In case of stretches selected for such treatment, Quantity should be decided judiciously by the RO, MoRT&H in consultation with State PWD.
1.24	Providing laying and compacting <b>Bituminous Concrete</b> as per technical Specification <b>Clause no. 507</b> including tack coat as per Technical Specifications <b>Clause no. 503.</b>	Cum				It may not be allowed in general, except under special circumstances. In case of stretches selected for such treatment, Quantity should be decided judiciously by the RO, MoRT&H in consultation with State PWD.

BILL NO. 1:ROAD MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remarks

BILL NO. 2: ROAD PROPERTY MAINTENANCE						
Item No.	Description of Items	Unit	Quantity	Rate (in Rs.)	Amount in Rs.	Remark
2.7	Cleaning, removing, clearing of dust and dirt from the existing metal crash barrier and pedestrian guard rail by washing with water and detergent etc. complete as directed by the Engineer.	RM				
2.14	Strengthening and repairing of partially damaged M.S. pedestrian Railing/ pipe railing complete including welding, repairing/ replacement of damaged parts/portions (salvage material will be Contractor's property) as per existing pattern complete in all respects including painting of the damaged portions to match with the existing railing and as per direction of the Engineer in-charge.	Per RM of full height of railing				

**BILL No. 3-PERFORMANCE BASED INCIDENT MANAGEMENT AND PAVEMENT REPAIRS**

Item No.	Description of Items	Unit	Quantity	Rate in Rs.	Amount in Rs.	Remarks
3.1	Providing treatment and repair to pot holes/ ruts and any depth/ patch repair of all types of bitumen pavement complete as per Technical Specification <b>Clause 3004.2</b> and as per direction of Engineer by using paving grade bitumen/ emulsion/ cold ready mix material. The job includes removal of all failed material, trimming of completed excavation to providing firm vertical	Per month				



Item No.	Description of Items	Unit	Quantity	Rate in Rs.	Amount in Rs.	Remarks
	faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per <b>Clause no. 503</b> back filling the patch with bituminous material as per <b>clause no. 509</b> . Compacting trimming and finishing the surface to form a smooth continuous surface all as per <b>Clause no. 3004.2</b> of Technical Specification.					
3.2	<p>Providing road patrols and surveillance, automobile assistance, tow away cranes and ambulance services as per maintenance standard Clause 2.2 of Part-I of Section 7 with:</p> <p>a) Patrol vehicles: .... no.  b) Ambulances: .... no.  c) Tow away vehicles ... no.</p>	Per month				

**BILL No.4 - ROAD SURVEY USING NETWORK SURVEY VEHICLE AND BRIDGE INSPECTION USING MBIU**

Item No.	Description of Items	Unit	Quantity	Rate in Rs.	Amount in Rs.	Remarks
4.1	Collection of geo-referenced Road Inventory, Road Condition/distresses detection, roughness measurement, using Network Survey Vehicle (NSV) having Laser Profilometer (LP), Transverse Profile Logger (TPL), Running distance measurement instrument (RDMI), DGPS for recording spatial coordinates, at least 2 HD Video Cameras and delivery of data as per extant policy	Per km per lane per run				

Item No.	Description of Items	Unit	Quantity	Rate in Rs.	Amount in Rs.	Remarks
4.2	Carrying out Inspection of Bridges/ Structures using Mobile Bridge Inspection Unit (MBIU) having trolley for accommodating minimum 2 persons as per requirement, and preparation of report	Per day				For bridge inspection, MBIU shall be used, wherever necessary, as decided by RO MoRT&H and State PWD. Bridge inspections without using MBIU shall be incidental to work and no separate amount shall be payable for this purpose.

Note: In case of any error of Clause of MoRTH Specifications, the appropriate correct clause of the MoRTH Specifications shall prevail, as per the decision of Engineer-In-Charge/ Employer.



**Criteria for estimation of rates & quantity of usage of Road Survey using Network Survey Vehicle (NSV) and Bridge Inspection using Mobile Bridge Inspection Unit (MBIU)**

1. Road Survey using Network Survey Vehicle having LSMS (Laser Controlled Management System) -
  - i. Road survey using NSV to be carried out every 6 months' time interval with the initial survey within 2 months of mobilization at site by the Contractor.
  - ii. Utilisation Charges for NSV to be considered @ Rs. 1,000/- per km per lane per run for estimation purpose while inviting bids; additional amount @ Rs. 25 per km to be considered for lead from nearest place of availability of NSV upto the project section and also for return from project section.
2. Bridge Inspection -
  - i. The pre-monsoon and post-monsoon inspections are to be carried out annually.
  - ii. Mobile Bridge Inspection Unit (MBIU) to be used for bridges wherever considered necessary, e.g. for major bridges where accessibility for inspection below deck level is difficult.
  - iii. Utilisation Charges for MBIU to be considered @ Rs. 50,000/- per day; additional amount @ Rs. 90 per km to be considered for lead;
  - iv. Cost of hiring of MBIU shall be for a minimum continuous period of 10 days per usage.
  - v. One full day provision to be kept for inspection of each bridge having total length =500m. for bridge having lengths more than 500 m, additional no. of days @ one day for each additional 500 m length be considered.

**Guiding principles for bridge inspection**

1. The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st May\*] every year in accordance with IRC:SP:35, as applicable. Specific attention may be given to the aspects as listed out in Proforma at **Appendix - A**. Report of this inspection shall be sent to the Employer before the [10th May\*] every year.
2. Depending upon the requirement of maintenance activities based upon the inspection report, necessary action is to be taken by RO (MoRT&H) in consultation with CE(NH), State PWD for needful rectification either as part of the provisions within quantities specified in BOQ or obtain prior approval of the Ministry for taking up additional works under existing / separate contracts, depending upon severity of the damages and estimated scope of works.
3. Post monsoon inspection shall be done by the [30th October\*] and the inspection report together with details of any damages observed shall be sent to the Employer by [15<sup>th</sup> November\*].
4. The Contractor shall complete the required repairs within the existing contract / through variations (with prior approval) and send to the Employer a compliance report. RO (MoRT&H) in consultation with Project Zone of the MoRT&H shall take a view regarding implementation of such works with prior approval of HQ if necessary and also regarding other works to be taken up separately.
5. For inspection and maintenance of bridges/structures, the Contractor shall deploy Mobile Bridge Inspection Unit (MBIU) procured on hire charged / lease basis if required, wherever necessary as decided by RO MoRT&H and CE(NH), State PWD, having necessary manpower (Driver, Operator and Helper). A Bridge Engineer as provided in Contract Data shall exclusively carry out inspection apart from other assistances provided for taking photographs. The Bridge Engineer shall prepare inspection report as per IRC: SP 35. High resolution photographs of bridges and its components especially showing distressed parts, shall be made available to the Employer along with duly analysed Inspection Report. If MBIU is not needed, then also routine inspection shall be carried out by the contractor and report shall be submitted as described above.
6. No separate expenses shall be allowed in the Contract for Technical Personnel.

**\* - to be decided by RO (MoRT&H) in consultation with CE(NH), State PWD for individual contracts depending upon local conditions**



PROFORMA

A. History of Bridge:-

- i. Name of Bridge -
- ii. Location of Bridge (with map showing predominant direction of wind) -
- iii. Whether any chemical industry is nearby or harmful affluent passing in the river -

B. Inspection Report:-

1. Bridge Component Affected

- i. Superstructure -
- ii. Substructure -
- iii. Foundations -
- iv. Bearings -
- v. Any other -

2. Nature of Distress Observed

- i. Rusting or staining of concrete
- ii. Bulging and/or cracking of concrete
- iii. Spalling of concrete
- iv. Distress in bearings - (types & natures to be recorded)
- v. Rusting or loosening of nuts, bolts / rivets / crack in welded parts or any steel members in visible steel / composite structure

3. Extent of increase in deterioration since previous inspection during currency of ongoing contract

4. Repair Measures proposed to be taken:-

C. Any Other Observation -

NOTE:

*The items of inspection as listed in proforma (item no. 1 under 'B') are briefly elucidated below:-*

*a. BEARINGS*

*While inspecting bearings, following shall be kept in mind:-*

- The general condition (like cleanliness/ rusting/ceasing/ deformation/ deterioration (e.g. due to oxidation, flattening, bulging, splitting, etc.), etc.) of bearings*
- Condition of grease/oil (if provided) in case of metallic bearings*
- Whether any structural cracks in supporting members like abutment cap, pier cap, pedestal, etc.*

*b. SUPERSTRUCTURE*

*Inspection of the superstructure is to be carried out in respect of the following:-*

- *Reinforced Concrete Members - Aspects to looked for shall include spotting (rusting), cracking, leaching, spalling and other signs of deterioration in critical areas of the structure viz. splash zone, water line at low tide level and portions exposed to atmospheric action on the windward side. For the latter, the web of concrete girder and box girder, articulations, undersides of decks etc. shall particularly be inspected.*
  - *Prestressed Concrete Members - Aspects to looked for shall include loss of camber, excessive deflection, cracking, deterioration in concrete viz. spalling etc. The critical areas being the end anchorage zones, junction of diaphragms, underside at the centre of span for longitudinal cracking etc.*
  - *Steel members and joints in Steel/ composite Structures:- Aspects to be looked for shall include loosening / cracking of nuts / bolts / rivets, cracks in welded joints, rusting / crack in any of the steel structure members / requirement of painting etc,*
- c. *EXPANSION JOINTS*  
*Besides inspection for proper functioning of the expansion joint, any deterioration in the material such as rusting, condition of elastomer, etc. shall be looked for along with remedial measures required.*
- d. *WEARING COAT*  
*The surface condition, i.e. whether there are any cracks, spalling of concrete, disintegration etc., needs to be reported along with remedial measures.*
- e. *HAND RAILS AND FOOTPATHS*
- f. *Hand rails, being slender members, are susceptible to corrosive distress. Appearance of rust stains, cracks, sealing, deterioration in concrete, spalling, etc., need to be reported along with remedial measures.*



**Specifications of standard NSV**

1. The standard NSV shall at least have the following components:
  - (i) **Laser Profilometer (LP):** For measuring dual wheelpath roughness. Must possess manufacturer's calibration certificate.
  - (ii) **Transverse Profile Logger (TPL):** For measuring Rut Depth in both wheelpaths. Must possess manufacturer's calibration certificate.
  - (iii) **Running Distance Measurement Instrument (RDMI):** For measuring linear chainage. Must possess manufacturer's calibration certificate.
  - (iv) **DGPS:** For recording spatial coordinates notional road centrelines. Must have capability of real time correction for more accurate spatial data using BHUVAN or similar technology.
  - (v) **HD Video Cameras:** At least two HD cameras recording continuous footage of the visible ROW (say at every 5m or 10m). Attributes shall be embedded on video such as chainage, name of road, date of data collection, latitude, longitude, altitude, distance travelled etc.
  - (vi) **Road Inventory and Condition Recording:** For recording other inventory and condition data as mentioned in **Appendix B- I & II.**
2. The collected data shall be supplied in the formats enclosed in **Appendix C** along with raw data generated from machine. Data formats are available in link:  
  
<https://morth.nic.in/suggestive-format-collection-and-reporting-data-using-network-survey-vehicle-nsv-guidance-purpose>
3. The data collected shall be supplied within 15 days after completion of survey.

## Road Inventory Data

Inventory Feature	Details of Measurement
GIS	Centre line coordinates at an interval of 5 m not more than 10m
Right of way	Through secondary sources such as design standards. Through visual observations in the field, wherever the boundary was visible.
Road type	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• Two-lane;</li> <li>• Four-lane without divided carriageway;</li> <li>• Four-lane with divided carriageway;</li> <li>• Six-lane without divided carriage way;</li> <li>• Six-lane with divided carriage way.</li> </ul>
Pavement surface type	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• Asphalt;</li> <li>• Cement Concrete;</li> <li>• Others.</li> </ul>
Pavement width	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• With accuracy to 10cm</li> </ul>
Shoulder type	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• None;</li> <li>• Paved;</li> <li>• Gravel;</li> <li>• Earth.</li> <li>• Other</li> </ul>
Shoulder width	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• With accuracy to <math>\pm 10</math>cm</li> </ul>
Median Type	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• Depressed</li> <li>• Barrier</li> <li>• Flushed</li> <li>• None</li> </ul>
Median width	Visual observations in the following categories: <ul style="list-style-type: none"> <li>• With accuracy to <math>\pm 10</math>cm</li> </ul>



Inventory Feature	Details of Measurement
Side Drain Type	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Open unlined;</li> <li>• Open lined;</li> <li>• Covered lined;</li> <li>• No drain;</li> <li>• Drain not needed.</li> </ul>
Cross section	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Cut;</li> <li>• Fill;</li> <li>• Embankment.</li> </ul>
Topography	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Flat;</li> <li>• Rolling;</li> <li>• Hilly.</li> </ul>
Road furniture	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Road Sign</li> <li>• Bus Shelter</li> <li>• Km stone</li> <li>• Toll Plaza</li> <li>• Crash Barrier (Start, End)</li> <li>• Street Light (Start, End)</li> <li>• Culvert</li> <li>• Bridge</li> </ul>
Land use	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Residential;</li> <li>• Commercial;</li> <li>• Industrial;</li> <li>• Agricultural;</li> <li>• Water bodies;</li> <li>• Public/community use;</li> <li>• Forest reserve.</li> </ul>

Inventory Feature	Details of Measurement
Wayside Amenities	<p>Visual observations in the following categories:</p> <ul style="list-style-type: none"> <li>• Restaurant / Motel</li> <li>• Toilet / Public Convenience</li> <li>• Rest Rooms</li> <li>• First Aid / Medical Centre</li> <li>• Telephone Booth</li> <li>• HT Line Crossing</li> <li>• Petrol Pump</li> <li>• Police Station</li> <li>• Temple / Mosque</li> </ul>
Emergency Contact	<ul style="list-style-type: none"> <li>• Ambulance</li> <li>• Hospital</li> <li>• Police</li> <li>• Toll Plaza</li> </ul>



## Road Condition Data

Num	Surface Distress	Rating Criteria
1.	Crack Area (% Surface Area)	<ul style="list-style-type: none"> <li>• Very Good (&lt;5% )</li> <li>• Good (5 - 10%)</li> <li>• Fair (11 - 20%)</li> <li>• Poor (21 - 30%)</li> <li>• Very Poor (&gt;30%)</li> </ul>
2.	Ravelling (% Surface Area)	<ul style="list-style-type: none"> <li>• Very Good (0%)</li> <li>• Good (1 – 5%)</li> <li>• Fair (6 - 10%)</li> <li>• Poor (11 - 30%)</li> <li>• Very Poor (&gt;30%)</li> </ul>
3.	Potholes (Numbers)	<ul style="list-style-type: none"> <li>• Very Good (0)</li> <li>• Good (1)</li> <li>• Fair (2)</li> <li>• Poor (2 – 5)</li> <li>• Very Poor (&gt; 5)</li> </ul>
4.	Depression (% Surface Area)	<ul style="list-style-type: none"> <li>• Very Good (0%)</li> <li>• Good (0-1%)</li> <li>• Fair (1-2%)</li> <li>• Poor (3 - 5%)</li> <li>• Very Poor (&gt;5%)</li> </ul>
5.	Bleeding (% Surface Area)	<ul style="list-style-type: none"> <li>• Very Good (&lt;1%)</li> <li>• Good (1-10%)</li> <li>• Fair (10-20%)</li> <li>• Poor (20 - 50%)</li> <li>• Very Poor (&gt;50%)</li> </ul>
6.	Patching (% Surface Area)	<ul style="list-style-type: none"> <li>• Very Good (&lt;2%)</li> <li>• Good (2-5%)</li> <li>• Fair (6-15%)</li> <li>• Poor (16 - 30%)</li> <li>• Very Poor (&gt;30%)</li> </ul>
7.	Edge Damage (Area m <sup>2</sup> )	<ul style="list-style-type: none"> <li>• Very Good (0 m<sup>2</sup>)</li> <li>• Good (0-0.5 m<sup>2</sup>)</li> <li>• Fair (0.5-1.0 m<sup>2</sup>)</li> <li>• Poor (1.0 – 5.0 m<sup>2</sup>)</li> <li>• Very Poor (&gt;5.0 m<sup>2</sup>)</li> </ul>
8.	Shoulder Condition	<ul style="list-style-type: none"> <li>• Good</li> <li>• Fair</li> <li>• Poor</li> </ul>

Num	Surface Distress	Rating Criteria
9.	Drain Condition	<ul style="list-style-type: none"> <li>• Good</li> <li>• Fair</li> <li>• Poor</li> </ul>
10.	Shoulder Elevation with respect to Edge	<ul style="list-style-type: none"> <li>• Level</li> <li>• Above</li> <li>• Below</li> </ul>
11.	Rutting	<ul style="list-style-type: none"> <li>• Rut Depth (mm)</li> </ul>
12.	Roughness	<ul style="list-style-type: none"> <li>• Roughness is to be recorded at an interval of 100m</li> </ul>



Data Formats: -

Excel Sheet of following link may be considered for guidance purpose: -

<https://morth.nic.in/suggestive-format-collection-and-reporting-data-using-network-survey-vehicle-nsv-guidance-purpose>

1. Location Reference Management System (LRMS)
2. Road Information System (RIS)
3. Pavement Management System (PMS)
4. Bridge Information System (BIS)
5. Traffic Information System (TIS)
6. Accident Information System (AIS)
7. Toll Information System (TOIS)
8. Environmental Information System (EIS)