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**MODEL CONTRACT DOCUMENT
FOR
MAINTENANCE OF HIGHWAYS**



**INDIAN ROADS CONGRESS
2011**



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MODEL CONTRACT DOCUMENT FOR MAINTENANCE OF HIGHWAYS

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INTRODUCTION

This Model Contract Document is to be used for the procurement of hybrid (i.e. partly on lump sum basis and partly on item rate basis) type of civil works for maintenance of roads through Competitive Bidding in projects that are financed in whole or in part by the Government. This document is not suitable for only lump sum contracts without substantial changes to the method of payment and price adjustment and to the Bill of Quantities, schedule of activities and so forth.

Post qualification process may be followed for maintenance contracts.

The evaluation and qualification criteria has been provided to address this aspect.

Broadly, the applicability of this document is for the scenarios mentioned below: -

- i) The target highways (National Highways, State Highways) that could be covered under the scope of the draft Model Contract Document must have been either for the pavement that has been strengthened/its capacity augmentation done and for which regular maintenance is required (including PR type work, if necessary);
 Or such highways which are not immediately being planned for strengthening of payment/capacity augmentation, but are important from connectivity point of view; therefore, their regular maintenance may be required for keeping them traffic worthy for which short term regular planned maintenance may be desirable;
 Or highways which may be taken up for development/capacity augmentation after 3~5 years; highways important from connectivity point of view.
- ii) Most of such highways may not require Initial Rehabilitation/Reinstatement etc. Accordingly, such items of works may not be included in the scope of the draft Contract Agreement. However, if necessary some such works could be taken up under "Day Works" depending upon specific site/project requirements.
- iii) Virtually no User and Operation Services have been included under the scope of work.
- iv) The length of the highway to be taken up for Contract Maintenance may be desirably between 40~100 km.
- v) Duration of the Contract may vary from 3~5 years but shall not be less than 3 years.

The draft Model Contract Document for Maintenance of Highways was approved by the Road Maintenance and Asset Management Committee (H-6) in the meeting (personnel given below) held on 18th September 2010. The draft was approved by the Highway Specifications and Standards Committee (HSS) in its meeting held on 22nd October 2010 for placing before the IRC Council. The draft was finally approved by the IRC Council in its meeting held on 11th November 2010 at Nagpur.

Personnel of Road Maintenance and Asset Management Committee:

Singh, Nirmaljit	Convenor
Jain, Dr. S.S.	Co-Convenor
Chaudhury, Sudip	Member-Secretary

Members

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Dushaka, Vanlal	Reddy, Dr. K. Sudhakar
Gupta, D.P.	Sharma, Dr. B.M.
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Kumar, Vishu	Rep. of D.G.B.R.
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Secretary General, IRC (R.P. Indoria)	

Introductory Guidance Notes on the Use of Model Contract Document for Maintenance of Highways

These introductory guidance notes have been prepared to assist the 'Employer' in the preparation, using the document, for the procurement of hybrid (i.e partly on lump sum basis and partly on item rate basis) type of Civil Works for Road Maintenance Contracts. The main objective of preparation of this document is to provide a uniform Bidding process which can be used with minimum changes to suit the specific work requirements by the various Road Authorities/Employer.

This document applies when selection of a Bidder (a Contractor) is determined on the basis of the lowest evaluated Tender following a post-qualification process. In case, pre-qualification has already taken place this document shall be modified to reflect any changes needed as a result of the outcome of the pre-qualification process.

The document follows a single stage, two envelope Bidding procedure. In summary, information relating to administrative legal and technical requirements is included in the first envelope, with no price information. Information relating to price offer (including the Bid and priced Bill of Quantities) are included in the second envelope. The Price offers of only those Bidders (Contractors) who satisfy the eligibility and qualification requirements stipulated in the Bidding Documents are opened to determine the lowest evaluated Bid.

Further, this document is intended for admeasurements contracts (unit prices or unit rates in Bill of Quantities), which is most prevalent to preserve the road network together with its assets.

Care should be taken to check the relevance of the provisions of the document against the requirements of the specific works to be procured. The following directions should be observed when using these documents:

- a) All the documents listed in the Table of Contents are normally required for the procurement of Works. However, they should be adapted as necessary to the circumstances of a particular Contract. Such adaptations are limited to Bid Notice, Instructions to Bidders, Special Conditions of Contract and Road Maintenance Standards and Specifications.
- b) The notes inside *[italics]* contain instructions for the user, as in the introduction section also. They should not be incorporated in the Bidding Document but shall be adopted to the requirements of the particular Bidding Document. The cover should be modified as required to identify the Bidding Documents as to the identification of the Project Roads, Contract, in addition to date of issue.

- c) Other notes should be retained in the issued Bidding Documents, since these notes provide important guidance to Bidders.

This document is based on the current practices being followed by the various financing agencies for such contracts with certain internationally acceptable Clauses and model formats, which have been adapted to suit the particular needs of procurement within India. This document has 09 (nine) Sections consists of 05 (five) Volumes. Section 2 (Instructions to Bidders), Section 3 (Form of Bid & Bank Guarantee) and Section 4 (Conditions of Contract, Part-I: GCC) shall not be altered. The Bid Notice is a sample of currently published advertisement that provides relevant and essential information to help Bidders to decide whether or not to participate in a particular Bid. This is provided in the document for information only.

The way in which an Employer addresses its specific needs is through the information provided in the Bid Data Sheet (BDS), the Evaluation and Qualification Criteria and the Special Conditions of Contract (SCC) as well as in the detailed requirements of the procurement in the Scope of Work and Specifications and/or the Drawings. *Drawings may be required if Scope includes improvement Works.*

Document when properly completed will provide all the information that a Bidder needs in order to prepare and submit a Bid. This should provide a sound basis on which the Employer can fairly, transparently and accurately carry out a Bid evaluation process on the Bids submitted by the Bidders.

The following briefly describes the various Sections of the document and how an Employer should use the document when preparing a particular Bidding Document.

VOLUME-I

Section 1: Bid Notice

- The “Bid Notice” form is provided at the beginning of the Bidding Documents for information.

Section 2: Instructions to Bidders (ITB)

- This Section provides relevant information to help Bidders prepare their Bids. Information is also provided on the submission, opening, and evaluation of Bids and on the award of Contracts.
- ***The text of the Clauses in this Section shall not be modified.***

Bid Data Sheet (BDS): This Section (Appendix to ITB) consists of provisions that are specific to each procurement and that supplement the information or requirements included in Section 2: Instructions to Bidders.

Section 3: Forms of Bid & Bank Guarantee

- This Section includes Qualification Information Forms (related to 'Instructions to Bidders') as well as Bid Forms.
- This Section contains forms which, once completed, will form part of the Contract. The forms for Bank Guarantee for Bid Security, Performance Security and Advance Payment, when required, shall be completed by only the successful Bidder after contract award.
- This Section also contains the form of the Letter of Acceptance, a sample format for 'Issue of Notice to Proceed with the Work' and the Form of Agreement.

Section 4: Conditions of Contract

Part-I: GCC and Contract Data

This Section as presented shall not be changed.

Part-II: Special Conditions of Contract

This Section contains provisions which either modify or supplement the General Conditions of Contract (GCC); and Additional Specifications which contain Specifications not covered under General Specifications and are specific to a particular contract.

VOLUME-II

Section 5: Road Maintenance Standards and Specifications

This Section has been presented in two parts; Part-I: Road Maintenance Standards and Part-II: Specifications for Road Maintenance Works. The contents presented are generally for guidance in document preparation and are based on current experience on similar projects. [The Employer may change/alter according to the specific project setting].

VOLUME-III

Section 6: Drawings: Schedule of Drawings

As a requirement three items mainly Locality Plan, Standard Cross Sections and Latest as Built Drawings have been incorporated which need to be extended/amended to the specific project requirements.

VOLUME-IV

Section 7: Bill of Quantities/Work Schedules

Similar to Section-6, this Section is also of informative nature and is not likely to be binding for any particular project requirement. In other words, the project specific considerations may change the BOQ contents as well as work schedules.

VOLUME-V

Section 8: Summary of Assets

This is also of informative nature and has been adopted from the current information on the similar projects.

Section 9: Any other Documents

This document is to maintain the civil structures/components only. The mechanical, electrical and electronic components associated with tolling system, communication system, variable message signs (electronic), special incident management accessories and the associated road appurtenances have not been included. This Section has been kept to include the items mentioned above.

(SECTION-1)

BID NOTICE

Bid Notice

1 The [Name of the Executing Organization] hereby invites Bids from experienced firms/organizations to Bid for short-term improvements and routine maintenance contracts for the following section of the [National/State] Highways:

Sl. No.	Name of Work	Approximate Value of Work	Bid Security	Cost of Bid document	Contract Duration
	Maintenance Contract for [Section from ___ to ___] Section of [NH/SH No. ___] (km ___ to km ___) of [Name of the State]	₹ [___] crore	[@ 1 % of value of work]	[may vary from ₹ 10,000 to ₹ 25,000 depending upon the size of work]	[___] months

2 The preliminary requirement (detailed requirement given in the Bid Document) of Bidding firm/organization for Bidding the above package is mentioned as under:

Sl. No.	Average Annual Turn-over during last 3 years(₹)	Work of similar nature during last 7 years (₹)
1	2	3
	Average Annual Turnover to exceed ₹ [~ 30 percent of approximate value of work] Crore	Single similer work of ₹ [~ 80 percent of approximate value of work] Crore or Two similer works each of ₹ [~ 50 percent of approximate value of work] Crore or Three similer works each of ₹ [~ 40 percent of approximate value of work] Crore

3 The Scope of Work includes the Routine Maintenance Works including maintenance of all the assets and facilities created on the above mentioned section of carriageway, shoulders and central verge etc., Periodical Renewals/Pavement Riding Quality Improvement Works, Flood Damage Repair Works, Special Works for a period of [___] Years.

4 The complete Bid Document may be obtained from the designated officer as per the address for communication given below from [dd/mm/yy] on any working day between [Time] hours and [Time] hours, on payment of non-refundable document fee in the

form of Demand Draft in favour of [Name of Executive Organization] payable at [____]. If the document is required by post/courier, an additional sum of ₹ [____] (for postage) should be sent along with the Demand Draft. The document can also be downloaded from [____] website http://www._____. Applicants submitting the downloaded version would need to pay the cost of document along with application in the above manner. The amendments/clarifications, if any, to the document will also be available on the above website.

5 The Bids must be submitted in hard bound form with page numbering and proper indexing. The Bids submitted in other forms like spiral bound form, loose form etc will be summarily rejected.

6 A pre-Bid meeting will be held on [dd/mm/yy], [time] at the address given below:

Date: - *

Time: - *

Venue: - *

7 The last date for submission of the Bids is [dd/mm/yy] upto [____] Hrs (IST). **

The technical Bids would be opened on [____] at [____] hours. @

The proposal, or any query or clarification on the Bid document shall be submitted on the following address:

Address for Communication:

[Designation, office address, contact details (fax no., email address, web-site address etc.) of the designated officer in the organization to whom Bids are to be submitted]

The pre-Bid meeting may be about 2 weeks before the last date of submission of Bids; The date, time and venue of the pre-Bid meeting may be suitably intimated.

** This may be 4 to 5 weeks from the date on which Bid documents were on sale.

@ This should be within one hour of the last date of the submission of the Bids in the presence of the representatives of the Bidders, if any.

(SECTION-2)

INSTRUCTIONS TO BIDDERS

Section 2: Instructions to Bidders

Table of Clauses

Clause	A. General	Clause	D. Submission of Bids
1	Scope of Bid	20	Deadline for Submission of Bid
2	Source of Funds	21	Late Bid
3	Eligible Bidders	22	Modification & Withdrawal of Bid
4	Qualification of Bidders		E. Bid Opening and Evaluation
5	One Bid per Bidder	23	Bid Opening
6	Cost of Bidding	24	Process to be Confidential
7	Site Visit	25	Clarification of Bids and Contacting the Employer
	B. Bidding Document	26	Examination of Bids and Determination of Responsiveness
8	Contents of Bidding Document	27	Correction of Errors
9	Clarification of Bidding Document	28	Evaluation and Comparison of Financial Bids
10	Amendment to Bidding Document	29	Price Preference for Domestic Bidders
	C. Preparation of Bid		F. Award of Contract
11	Language of Bid	30	Award Criteria
12	Documents Comprising the Bid	31	Employer's Right to Accept any Bid and to Reject any or all Bids
13	Bid Prices	32	Notification of Award and signing of Agreement
14	Currencies of Bid and Payment	33	Performance Security
15	Bid Validity	34	Advances
16	Earnest Money/Bid Security	35	Corrupt or Fraudulent Practices
17	Alternative Proposals by Bidders	36	Labour Laws and Regulations
18	Format and Signing of Bid	37	Fundamental Breach
19	Sealing and Marking of Bid		Appendix to ITB

Section 2 Instructions to Bidders (ITB)

A. General

1 Scope of Bid

1.1 The Employer (as defined in the Appendix to ITB) invites Bids for award of a road maintenance contract for the road(s) listed in the Bid Data Sheet. Road Maintenance Works and Activities to be executed under the Contract will be as given in the Conditions of Contract and Contract Data.

1.2 The successful Bidder will be expected to complete the Works by the Intended Completion Date specified in the Contract Data.

1.3 Throughout this Bidding document, 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 under this contract will be met from [Name of the Executive Organization].

3 Eligible Bidders

3.1 This Invitation for Bids is open to all Bidders, who fulfil the requirements laid down in Clause 4 of ITB.

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 sector undertaking, autonomous body, authority by whatever name called under the Central or the State Government.

4 Qualification of Bidders

4.1 All Bidders shall include the following information and documents with their Bids in Section 3, Qualification Information, unless otherwise stated in the Appendix to ITB:

- a) copies of original documents defining the constitution or legal status, place of registration and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;
- b) Total monetary value of civil construction and maintenance works performed for each of the last three years;

- c) Experience certificate in works of a similar nature and size for each of the last seven years with certificates from the officer concerned of the rank of Executive Engineer or equivalent;
- d) Evidence of availability (either owned or leased) of items of construction equipment named in **Clause 4.3 B(b) (i)**.
- e) Details of the technical personnel proposed to be employed and availability of skilled and unskilled personnel for the Contract having the qualifications defined in **Clause 4.3 B(b) (ii) & (iii)**.
- f) Reports on the financial standing of the Bidder and a certificate from Chartered Accountant as a proof of turnover for the past three years;
- g) Evidence of access to line (s) of credit and availability of other financial resources facilities (10 percent of contract value), certified by the Bankers (Not more than 3 months old).
- h) Undertaking that the Bidder will be able to invest a minimum cash upto 20 percent of contract value of work, during implementation of work.
- i) A Bidder shall not be affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer for helping the Employer in preparing the Bid and/or to supervise the contract, if any.
- j) 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 matter of dispute;
- k) All Bidders shall provide in Section 3, Qualifications information, a preliminary description of the proposed work method and schedule, including drawings (if any) and charts, as necessary. The proposed methodology should include programme of executing Road Maintenance Works and Activities backed with resource planning (equipment, labour and material) duly supported with broad calculations and quality assurance procedures, safety, Health and Environment Plan at work place and arrangement for traffic in work zones proposed to be adopted justifying their capability to execute and complete the work, as per Road Maintenance Standards and Specifications, as per the Stipulated Date of Completion.

4.2 Bids from joint venture are not allowed.

4.3 A To qualify for award of the Contract, each Bidder should have in the last three years for (a) and seven years for (b):

- a) Achieved average annual financial turnover (in all cases of civil engineering construction works connected with roads and bridges and allied services

- only) of at least the amount prescribed in NIT for which Bid has been invited.
{This should be ₹ [~ 30 percent of approximate value of work] Crore}
- b) Satisfactorily completed, as a lead contractor, or as a Concessionaire as a Member of the SPV having participation of not less than 26 percent equity, or as a nominated sub-contractor, 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, should be either of the following:
- i) Three similar* completed works each costing not less than an amount equal to ₹ [~ 40 percent of approximate value of work] Crore.
 - ii) Two similar* completed works each costing not less than an amount equal to ₹ [~ 50 percent of approximate value of work] Crore.
 - iii) One similar* completed work costing not less than an amount equal to ₹ [~ 80 percent of approximate value of work] Crore.

* - the "similar"** work constitutes maintenance/construction of bituminous road/cement concrete road (as is relevant for the particular work)

Escalation factor, as specified in the Appendix, shall be used to bring the value of such completed works at the level of current financial year i.e. [_____]

4.3 B a) Each Bidder must produce:

- i) An affidavit on a Stamp Paper, duly attested from the Notary, that the information furnished with the Bid documents is correct in all respects; and failure to submit the document as specified shall make the Bid non-responsive.
- b) Each Bidder must demonstrate:
 - i) Evidence of availability (either owned or leased) of items of construction equipment as stated in the Appendix to ITB.
 - ii) Availability of technical personnel for this work as stated in the Appendix to ITB.
 - iii) Availability of skilled and unskilled personnel (minimum), as stated in the Appendix to ITB

4.3 C To qualify for a package of contracts made up of this for which Bids are invited in the Notice Inviting Tender, the Bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the contract.

4.3 D Sub-contractor:- Not more than 50 percent of the value of work of initial contract amount will be sub-contracted.

4.4 Sub-Contractors' experience and resources shall not be taken into account in determining the Bidder's compliance with the qualifying criteria except to the extent stated in **4.3 A** above.

4.5 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:

Assessed available Bid capacity = (A*N*3.5 - B)

where

- A Maximum value of civil engineering works connected with roads and bridges and allied services executed in any one year during the last five years (updated to the price level of the year indicated in Appendix) taking into account the completed as well as works in progress.
- N Number of years prescribed for completion of the works for which Bids are invited.
- B Value (updated to the price level of the year indicated in Appendix) of existing commitments and on-going works to be completed during the next.....years (period of completion of the works for which Bids are invited).

4.6 Even though the Bidders may meet the above qualifying criteria, they are subjected 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;
- 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 work etc.; and/or
- iii) tampered the Bid document in any manner.

5 One Bid per Bidder

5.1 Each Bidder shall submit only one Bid for one package. A Bidder who submits more than one Bid, with the Bidder's participation will cause all the proposals to be disqualified.

6 Cost of Bidding

6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid. 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 undertaking the maintenance Works. The costs of visiting the Site shall be at the Bidder's own expense. For this purpose he may contact the person whose contact details are given in the Appendix to ITB. Even if he chooses not to visit the site for the purpose of this Clause, he will be deemed to have visited the site and no claim allegedly arriving out of his not visiting the site and its surroundings will be entertained subsequently.

B. Bidding Document

8 Contents of Bidding Document

8.1 The set of Bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10:

Volume- I

- 1) Bid Notice
- 2) Instructions to Bidders
- 3) Forms of Bid and Bank Guarantee
- 4) Conditions of Contract

Part I General Conditions of Contract and Contract Data;

Part II Special Conditions of Contract

Volume- II

- 5) Road Maintenance Standards & Specifications

Volume - III

- 6) Drawings

Schedule of Drawings

Volume- IV

- 7) Bill of Quantities / Work Schedules

Volume- V

- 8) Summary of Assets
9) Any other documents

8.2 One set of the Bidding Documents will be issued to the Bidder against payment.

8.3 The Bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, road maintenance standards & specifications, bill of quantities, forms and drawings given in the Bid Documents. 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 Clarification of Bidding Document

9.1 A prospective Bidder requiring any clarifications of the Bidding Documents may notify the Employer in writing at the Employer's address indicated in the Notice Inviting Tenders. The Employer will respond to any request for clarification received earlier than 15 days prior to the deadline for submission of Bids. Copies of the Employer's response will be forwarded to all purchasers of the Bidding Documents, including a description of the inquiry, but without identifying its source.

9.2 Pre-Bid Meeting

9.2.1 If a pre-Bid meeting is to be held and the Bidder or his official representative is invited to attend it, the date, time and address of the meeting will be as per details given in the Appendix to ITB.

9.2.2 The purpose of the pre-Bid meeting will be to clarify issues and to answer questions on any matter in respect of this contract that may be raised.

9.2.3 For convenience, the bidder may send their questions, in writing, to the Employer and preferably to reach one week before the pre bid meeting.

9.2.4 Minutes of the pre-Bid meeting, including the text of questions raised (without identifying the source of the enquiry) and the responses given will be transmitted without delay to all purchasers of the Bidding Documents. Any modifications of the Bidding documents listed in Clause 8.1, which may become necessary as a result of the pre-Bid meeting 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 Non-attendance at the pre-Bid meeting will not be a cause for disqualification of the Bidder.

10 Amendment to Bidding Documents

10.1 Before the deadline for submission of Bids, the Employer may modify the Bidding documents by issuing addenda.

10.2 Any addendum thus issued shall be part of the Bidding Documents and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum to the Employer. The Employer will assume no responsibility for postal delays.

10.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may extend, as considered 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 language.

12 Documents Comprising the Bid

12.1 The Bid submitted by the Bidder shall be in two separate parts:

Part I This shall be named Technical Bid and shall comprise of:

- i) The demand draft for the cost of the Bidding Documents must be placed in a separate cover, marked "cost of Bidding Document downloaded from the internet", for Bidding documents downloaded from the website.
- ii) Earnest Money in a separate cover marked 'Earnest Money';
- iii) Qualification information, supporting documents, affidavit and undertaking as specified in **Clause 4**;
- iv) Undertaking that the Bid shall remain valid for the period specified in **Clause 15.1**;
- v) Any other information/documents required to be completed and submitted by Bidders, as specified in the Appendix to ITB, and

- vi) An affidavit (on non-judicial stamp paper of ₹ 100) by the Bidder affirming that information he has furnished in the Bidding Document is correct to the best of his knowledge and belief.

Part II. It shall be named Financial Bid and shall comprise of:

- i) Bid form
- ii) Priced bill of quantities.

12.2 Each part shall be separately sealed and marked in accordance with Sealing and Marking instructions given in Clause 19.

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

Section	Particulars
1)	Bid Notice
2)	Instructions to Bidders
4)	Conditions of Contract and Contract Data
5)	Road Maintenance Standards & Specifications
6)	Drawings (if any)

13 Bid Prices

13.1 The Contract amount 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 rates and prices (both in figures and words) for all items of the Works described in the Bill of Quantities. The items for which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. Corrections, if any, shall be made by crossing out, initialling, dating and rewriting.

13.3 All duties, taxes, 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.

13.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment except as stated in the conditions of contract.

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 date for Bid submission specified in **Clause 20**. A Bid valid for a shorter period shall be rejected by the Employer and will be declared non-responsive.

15.2 In exceptional circumstances, prior to the expiry of original time limit of the Bid, 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. 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 Bid Security/Earnest Money

16.1 The Bidder shall furnish, as part of the Bid, Bid security/Earnest Money, in the amount as specified in the Appendix to ITB.

16.2 The Earnest Money shall, at the Bidder's option, be in the form of Bank Guarantee/Demand Draft of any bank as specified in the Appendix to ITB. It shall be valid for 45 days beyond the validity of the Bid.

16.3 Any Bid not accompanied by an acceptable Earnest Money, unless exempted in terms given in the Appendix to ITB, shall be rejected by the Employer and will be declared non-responsive.

16.4 The Earnest Money of unsuccessful Bidders will be returned within 28 days of the end of Bid validity period specified in **Sub-Clause 15.1**.

16.5 The Earnest Money of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid Security/Earnest Money will be forfeited:

- a) if the Bidder withdraws the Bid after its submission during the period of Bid validity;
- b) if the Bidder does not accept the correction of the Bid price, pursuant to **Clause 27**; or
- c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to:
 - i) sign the Agreement; and/or
 - ii) furnish the required Performance Security

17 Alternative Proposals by Bidders

17.1 Bidder shall submit offers that fully comply with the requirements of the Bidding documents including conditions of contract. Conditional offer or alternate offer will not be considered further in the process of tender evaluation.

18 Format and Signing of Bid

18.1 The Bidder shall submit one set of the Bid comprising of the documents as described in **Clause 12**.

18.2 The Bid shall be typed or written in ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the Bid shall be signed by the person or persons signing the Bid. The scanned signature shall not be accepted and it will make the Bid non-responsive.

18.3 The Bid shall contain no overwriting, alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder. In such cases corrections shall be made by scoring out the cancelled portion, writing the correction and signing and dating it along with the stamp by the person or persons signing the Bid.

D. Submission of Bids

19 Sealing and Marking of Bids

19.1 The Bidder shall place the two separate envelopes (called inner envelopes) marked "Technical Bid" and "Financial Bid" in one outer envelope. The inner envelopes will have markings as follows:

Technical Bid: To be opened on _____ (date and time of Technical Bid opening as per **Clause 23.1**)

Financial Bid: Not to be opened except with the approval of the Employer.

The contents of the Technical and Financial Bids shall be as specified in **Clause 12.1**.

19.2 The inner and outer envelopes containing the Technical and Financial Bids shall

- a) be addressed to the Employer at the address provided in the Appendix to ITB;
- b) bear the name and identification number of the Contract as defined in **Clause 1.1**; and

- c) provide a warning not to open before the specified time and date for Bid opening as defined in **Clause 23.1**.

19.3 In addition to the identification required in **Sub-Clause 19.2**, each of the envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared late, pursuant to **Clause 21**, or is declared non-responsive pursuant to **Clause 23**.

19.4 If the outer envelop is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or pre-mature opening of the Bid.

19.5 Bid shall only be in bound volume (Spiral binding or in loose form will not be accepted).

20 Deadline for Submission of Bid

20.1 Complete Bids (including Technical and Financial) must be received by the Employer at the address specified in the Appendix to ITB not later than the date and time indicated in the Appendix to ITB. In the event of the specified date for the submission of Bids being declared a holiday for the Employer, the Bids will be received up to the specified time on the next working day.

20.2 The Employer may extend the deadline for submission of Bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the Bidders previously subject to the original deadline will then be subject to the new deadline.

21 Late Bid

21.1 Any Bid received by the Employer after the deadline prescribed in **Clause 20** will be returned unopened to the Bidder.

22 Modification and Withdrawal of Bid

22.1 Bidders may modify or withdraw their Bids by giving notice in writing before the deadline prescribed in **Clause 20**.

22.2 Each Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with **Clause 18 & 19**, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate.

The envelopes for modifications on 'Technical Bid' and 'Financial Bid' shall be submitted in separate sealed envelopes and marked as 'Modifications of Technical Bid' or 'Modifications of Financial Bid', as the case may be.

22.3 No Bid shall be modified after the deadline for 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 in the forfeiture of the Bid security pursuant to **Clause 16**.

E. Bid Opening and Evaluation

23 Bid Opening

23.1 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 the Appendix to ITB. 'Financial Bid' of only those Bidders, whose Technical Bids have been determined to be responsive, shall be opened on a subsequent date, which will be notified to such Bidders.

23.2 The Employer will open the envelope marked the "Technical Bid" of all the Bids received (except those received late), including modifications of Technical Bid made pursuant to **Clause 22** in the presence of the Bidders/Bidders' representatives who choose to attend at the time, date and place specified in the Appendix to ITB. 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.

23.2.1 Envelopes marked 'WITHDRAWAL' shall be opened and read. Bids for which acceptable notice of withdrawal has been submitted pursuant to **Clause 22** shall not be opened.

23.2.2 Bidder's names, withdrawals, 'modification of Technical Bid', the presence of Bid security and such other details, as the Employer may consider appropriate, will be announced by the Employer at the time of opening.

23.2.3 In case the Bid document has been downloaded from the web site, it shall be checked as to whether the Bidder has paid for the cost of Bid document along with the Bid before further processing of his proposal.

23.3 In all other cases, the amount of Earnest Money, forms and validity shall be announced. Thereafter, the Employer at the opening as he may consider appropriate, will announce the Bidders' names and such other details. If the Bid security furnished does not conform to the amount and validity period as specified in the "Bid Notice" and has not been furnished in the form specified in **Clause 16**, the remaining Technical Bid and the sealed financial Bid will be returned to the Bidder.

23.4 The Employer will prepare minutes of the Bid opening, including the information disclosed to those present, in accordance with **Clause 23.2**.

23.5 Within one week after the opening of Technical Bids, their evaluation will be taken up with respect to Bid security, qualification information and other information furnished in Part I of the Bid in pursuant to **Clause 12.1** and a list will be drawn up of the responsive Bids whose Financial Bids are eligible for consideration.

23.6 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.

23.7 At the time of opening of 'Financial Bid', the names of the Bidders whose Technical Bids were found responsive, in accordance with **Clause 23.6**, will be announced. The Financial Bids of only those Bidders, whose Bids were found to be responsive, will be opened. The remaining Bids will be returned unopened to the Bidders. The responsive Bidders' names, the Bid prices, the total amount of each Bid, any discount/rebate, modification of Financial Bids 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.

23.8 The Employer shall prepare the minutes of the opening of 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 contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until 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 No Bidder shall contact the Employer on any matter relating to his Bid from the time of Bid opening to the time the contract is awarded.

25.2 Any attempt by the Bidder to influence the Employer's Bid evaluation, Bid comparison or contract award decisions may result in the rejection of his 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) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of Bidding documents. During the detailed evaluation of

“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 A substantially responsive “Financial Bid” is one, which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistency with the Bidding documents, the Employer’s rights or the Bidder’s obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

26.3 If a “Financial Bid” is not substantially responsive, it will be rejected by the Employer, and will not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

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 in words, the rate in words will govern; and
- b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted 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 Bid Security shall be forfeited in accordance with **Sub-Clause 16.6(b)**.

28 Evaluation and Comparison of Financial Bids

28.1 The Employer will evaluate and compare only those 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**.

29 Price Preference

29.1 There will be no price preference to any Bidder.

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, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of **Clause 3, and (b)** qualified in accordance with the provisions of **Clause 4**; and

In no case, shall the contract be awarded to any Bidder whose available Bid capacity is less than the evaluated Bid price.

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, without assigning any reason whatsoever 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 (hereinafter and in the Contract called the "Contract Price") in consideration of the execution and completion of Maintenance Works as prescribed by the Contract.

32.2 The notification of award will constitute the formation of the Contract, signing of the Agreement, 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 upon the latter furnishing the performance security.

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 and return Bid Security of unsuccessful Bidders.

33 Performance Security

33.1 Within 21 (twenty one) 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 additional security for unbalanced Bids in accordance with the stipulations laid down below and Clause 46 of Part I General Conditions of Contract, valid for the period of 42 days after the expiry of defect liability period; and sign the contract agreement.

If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's/ 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 schedules proposed. After evaluation of the price analyses, the Employer may require that the amount of performance security, set forth above, may 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.

33.2 The performance security shall, either, be in the form of a Bank Guarantee or fixed Deposit Receipts, in the name of Employer, from a Bank, as applicable in case of earnest money/Bid security defined in Appendix to ITB.

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 forfeiture of the Bid security.

34 Advances

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

35 Corrupt or Fraudulent Practices

35.1 The Bidders/contractors and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this document, the Employer shall reject the Bid without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice,

fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “Prohibited Practice”) in the Selection Process. In such an event, the Employer shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Employer for, inter alia, time, cost and effort of the Employer, in regard to the selection process, including consideration and evaluation of Bid offers.

35.2 Without prejudice to the rights of the Employer under **Clause 35.1** hereinabove and the rights and remedies which the Employer may have under the LOA or the Agreement, if an Bidder is found by the Employer to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LOA or the execution of the Agreement, Bidder shall not be eligible to participate in any tender or issued by the Employer during a period of 2 (two) years from the date such Bidder is found by the Employer to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice, as the case may be.

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

- b) "**fraudulent practice**" means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- c) "**coercive practice**" means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;
- d) "**undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the Employer with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and
- e) "**restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among the Bidders with the objective of restricting or manipulating a full and fair competition in the Selection 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.

36 Labour Laws and Regulations

36.1 The Bidders shall be aware of the provisions of various Labour Laws, Regulations and Welfare Measures applicable for Construction Workers in India.

37 Fundamental Breach

37.1 The Bidders shall be aware of the provisions of Fundamental Breach stated in the Conditions of Contract.

Appendix to ITB

The Employer should fill out this Appendix to ITB before issuing the Bidding documents
The insertions should correspond to the information provided in the Invitation for Bids.

Instructions to Bidders Clause Reference:

(1.1) The Employer is [Designation of the Competent Authority, Name of concerned Executive Organization]

(1.1) The Work is Short Term Improvement and Routine maintenance of [Name of project section and chainage of NH / SH] .

The main elements of the Works and Services to be provided by the Contract are listed below:

- a) Routine Maintenance Works and Services for the Highway(s) indicated in the Bidding Data, are to be carried out in accordance with **GCC Clause 16.2**, and each bill item under this category shall be performance-based; The Contractor is required to quote fixed lump sum price per km per month for carrying out Routine Maintenance of the Road Assets. The agreed monthly payment for Routine Maintenance will be made to the Contractor on certification by the Engineer that the Maintenance of the Road Assets complies with the Road Maintenance Standards specified in **Section 5**.
- b) Periodic Renewal (PR)/Pavement Riding Quality Improvement (PRQI) including application of Profile Corrective Course (PCC) are to be carried out by the Contractor as instructed by the Engineer by issue of a Work Order in accordance with **GCC Clause 16.3**. The Contractor will quote unit price of items of works to carry out PR/PRQI works for the roads specified in the Contract as per BOQ, excluding the Profile Correction course. In each year about 30-40 percent of the length of roads/roads sections are envisaged to be covered under PR/PRQI Works. PR/PRQI stretches to be taken up each year should be continuous and at least 10 lane-km length*.
- c) Flood Damage Repair (FDR) Works and Special Repair Works (SR) and Services, consisting of such activities as are necessary in order to remedy unexpected damage caused due to floods, natural calamities etc., or obstruction of, any part of the Highway as a result of accidents and/or unforeseen natural phenomena, are to be carried out in accordance with **GCC Clause 16.4**;

* Note: The minimum length may be changed depending upon size of contract and specific site conditions.

(4.3A) (b) The value shall be as mentioned in Bid Notice. Escalation factor (for the cost of works completed during the last 7 years) may be taken as follows:

Year Before	Multiplying Factor
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61
Six	1.77
Seven	1.94

(4.3. B) (b)(i) The key equipments* for road works

For Flexible Pavement

Name of the Equipment	Quantity
1. Mini Hot Mix Plant- 6/10 T/Hour capacity, with indirect heating arrangement)	1
2. Sensor Paver	1
3. Vibratory roller (8/10t)	1
4. Static Roller (8/10 t)	1
5. Pneumatic Roller	1
6. Bitumen/emulsion sprayer	1
7. Mechanical Hydraulic Broom(1250 Sqm per Hour)	1
8. Water tanker	2
9. Air compressor	2
10. Dewatering Pump	1
11. Tippers/Dumper Trucks	2
12. Insulated trucks for long distance delivery of bituminous material	1
13. Mobile maintenance unit with necessary equipment	1 for every 50 km stretch
14. Dozer – D – 50 – A - 15	1

Note- 1 no. of Hot mix plant with electronic control (30-40 ton/hour or any other appropriate size compatible to the job) may be hired; hiring arrangement to be demonstrated.

For Rigid Pavement

For joint resealings

- i) Plough for removing old sealant.
- ii) Wire Brushes.
- iii) Sand blasting equipment, air compressor with in line filters to trap oil and water, hoses, 6 mm venturi- type tube.
- iv) Broom and/or power vacuum.
- v) Backer rod installation tool/roller wheel
- vi) Sealant applicator equipment (and Mixing Head for two component systems).
- vii) Pail mixer.
- viii) Plastic measuring beakers.
- ix) Masking Tape.
- x) Trowels.
- xi) Personal safety equipment (i.e. gloves, masks, safety vest first air box etc).

For Crack Repair and Cross-Stitching

- i) Random crack saw (130 mm dia diamond blades).
- ii) Vertical spindle router (belt drive).
- iii) Single headed scabbling tool or router (crack cutter).
- iv) Template.
- v) Small portable generator.
- vi) Portable air compressor min. 71 litres/sec at 0.55 N/mm².
- vii) Rotary impact hammer drill.
- viii) Trowels and floats.
- ix) Personal safety equipment (gloves, masks, safety vest etc)

For Spall Repair

- i) Concrete saw (170 mm to 250 mm dia diamond blades for large patches, 130 dia for small patches)
- ii) 170 to 250 Portable air compressor min. 71 litres/sec at 0.55 N/mm².
- iii) Electric chisel.

- iv) Club Hammer (4 kg).
- v) Cold Chisels.
- vi) Pail mixer, hand held or paddle wheel.
- vii) Mixing pails, small.
- viii) Plastic measuring beakers.
- ix) Masking Tape.
- x) Hand tools, shovel, trowels, tampers and screeds.
- xi) Personal safety equipment (i.e. gloves, masks, safety vest etc).

For Full Depth and Whole Slab Replacement Repairs

- i) 50-60 H.P. diesel or petrol mobile concrete saws (smaller machine may be suitable for limestone aggregate concrete).
- i) 750 – 1000 mm dia. Diamond saw blades for full depth repair 300 - 450 mm dia Diamond saw blades suitable for partial depth cutting
- iii) Portable air compressor min 118 litres/sec at 0.55 N/mm and concrete breaking tools/jack hammer (14 kg)
- iv) Heavy duty wire cutters or bolt croppers
- v) Small portable generator
- vi) Rotary drill
- vii) Club hammer (4 to 6 kg)
- viii) Cold chisels
- ix) Drilling jig or frame.
- x) Welding equipment (for continuously reinforced slabs)
- xi) Frame for holding dowel bars in position until resin mortar hardens (jointed slabs)
- xii) Poker vibrator(s)
- xiii) Vibrating finishing beam (for levelling surface uniformly)
- xiv) Wire Tyne (for surface texturing)
- xv) Trowels, floats and arising tool

Saw blade selection

The saw blade for cutting concrete must be compatible with the output and speed of the saw, concrete strength and application.

*Note.- Requirement to be modified keeping in view the requirement and size of contract package.

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

The Technical Personnel are:

Sl.No	Personnel	Qualification	Particular Experience (minimum requirement)	No. of Persons
1)	Project Manager	B.E. (Civil) + 7 Years Exp.	5 years on Major Highway works & bridge construction /maintenance works.	1
2)	Site Engineer-cum-Incident/Road Property Manager	B.E.Civil + 3 Years Exp Or Diploma + 8 years Exp.	3 years on highway construction/maintenance work	1
3)	Manager (Planning)	B.E. Civil + 3 Years Exp. Or Diploma + 8 years Exp.	3 years on highway construction/maintenance work	1

Note: Biographical data for the persons mentioned above must be furnished

(4.3 B) (b) (iii) The minimum number of Skilled and Unskilled Personnel required are:-

Sl.No	Personnel	No. of Persons
1)	Skilled operator for mini Hot Mix Plant	1
2)	Skilled operator for vibratory/ static/pneumatic roller	2
3)	Foreman for mechanical repairs	1
4)	Skilled operator for Sensor Paver	1
5)	Skilled operator for mobile pavement repair unit	2
6)	Unskilled Labourer for every 50 km	10

(7.1) The contact person is:

Designation: Project Director/Executive Engineer

Address:

Telephone No.

(9. 2.1) Place, Time and Date for pre-bid meeting are:

Place: (will be intimated later, if any)

Time

Date

(11.1) Language of the bid is: English

(16.1) The amount of Earnest Money shall be as mentioned in NIT

Bank Guarantee/Demand Draft must be in favour of:

[Name of Executive Organization] payable at [Name of Place].

(16.2) A. The bid security shall be either in the form of a Bank Guarantee or Demand Draft, in the name of Employer, from following banks would be accepted:-

- i) State Bank of India or its subsidiaries,
- ii) Any Indian Nationalised Bank
- iii) A Foreign Bank (issued by a branch outside India) with a counter guarantee from SBI or its subsidiaries or any Indian Nationalised Bank.
- iv) Any Scheduled Commercial Bank approved by RBI having a net worth of not less than ₹ 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.

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

The capital adequacy of the Bank shall not be less than the norms prescribed by RBI.

C. The Bank Guarantee issued by a Cooperative Bank shall not be accepted.

(20.1) The Employer's address for the purpose of Bid submission is **[Address of Executive Organization]**

(20.1) The deadline for submission of bids shall be:

Time

As prescribed in Bid Notice

Date

(23.1) The date, time and place for opening of the Technical Bids are:

A) Technical Bid

Date

Time As prescribed in Bid Notice Place

(B) Financial Bid (For qualified and responsive bidders)

Date

Time (Will be intimated later)

Place

(33.1) The amount and validity period of the performance security is:

Amount: 5 percent of the contract price plus additional security for unbalanced bids in accordance with Clause 28.3 of ITB and Clause 46 of Part I General Conditions of Contract.

Validity Period: (i) Performance security shall be valid until a date 42 days after the expiry of Defect Liability Period.

The concept of Defect Liability Period is not applicable to Routine Maintenance Works and Services. The correction of inadequate provision of such works or services is covered by the requirements for the achievement of Service Quality Levels, under the Road Maintenance Standards and Specifications. The Defect Liability Period for the various categories of other works, counted from the Date of Substantial Completion stated in the relevant Taking Over Certificate, shall be as follows:

Periodic Renewal (PR)/Pavement Riding Quality Improvement (PRQI):
12 months

Works for which Work Orders are issued: 12 months

For rigid pavement, i.e. full depth repairs, partial depth repairs, replaced sealants and patch repairs with epoxy mortar : 24 months

The Appendix forms part of Bid. Bidders are required to fill up all the blanks in the form of Bid and Appendix thereto)

(SECTION-3)

**FORMS OF BID & BANK
GUARANTEE**

To

[Designation, Address of Competent Authority of Executive Organization]

DESCRIPTION OF WORKS: BID FOR SHORT TERM IMPROVEMENTS AND
 ROUTINE MAINTENANCE OF 2/4 LANE SECTION OF
 NH NO. / SH NO. _____
 FROM _____ TO _____ IN
 THE STATE OF _____ (KM.
 _____ TO KM. _____)

Reference letter No.

Dear Sir,

Having examined the Bid Documents, Instructions to Bidders, Scope of works, General Conditions of Contract, Special Conditions of Contract, Road Maintenance Standards and Specifications, Bill of Quantities, Schedules for the execution of above named works, we, the undersigned offer to execute and complete such works and remedy and defects therein in conformity with the said bid documents for the sum of ₹ _____ (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 fifteen (15) 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 120 days from the date of Bid opening 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 other 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 therefor.

7 We understand that you are not bound to accept the lowest or any bid you may receive.

8 A copy of the Power of Attorney/Authorization for signature is enclosed.

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 : _____

Telephone No. _____

Facsimile No. _____

Signature of Witness _____

Name of witness _____

Address of witness _____

** Certified copy of Power of Attorney/Authorisation for signature shall be furnished by the bidder.

FORM OF BANK GUARANTEE FOR BID SECURITY

WHEREAS _____ (Name of Tenderer) (hereinafter called the Tenderer) wishes to submit his tender for maintenance work of _____ (from Km. _____ to km. _____) in the state(s) of _____ herein called "the Tender" KNOW ALL MEN by these present that we _____ (Name of Bank) of _____ (Name of country) having our registered office at (_____) (hereinafter called the 'Bank') are bound unto the [Name of Executive Organization] (hereinafter called "the Employer") in the sum of ₹ _____ (Rupees _____) *for which payment can truly be made to the said Employer. The Bank bind themselves, their successors and assigns by these presents with the common seal of the Bank this day _____ of [Year] and undertake to pay the amount of _____ ₹ _____ to the employer upon receipt of this written demand without the Employer having to substantiate his demand.

The conditions of this obligation are:

If the Tenderer withdraws his tender during the period of Tender validity specified in the Form of Tender;

Or

If the Tenderer having been notified of the acceptance of his Tender by the Employer during the period of tender validity;

fails or refuses to execute the Form of Agreement in accordance with the instructions to bidders, if required; or

fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders.

We undertake to pay to the Employer upto the above amount upon receipt of his first written demand, without the employer having to substantiate his demand, provided that in his demand the Employer shall state that the amount claimed by him is due to him owing to the occurrence of any one of the above conditions, specifying the occurred condition or conditions.

This guarantee will remain in force upto and including the date _____ **
days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, at any time prior to the closing date

for submission of the Tenders Notice of which extension (s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date of expiry of this guarantee.

SIGNATURE OF AUTHORISED REPRESENTATIVE OF THE BANK _____

NAME AND DESIGNATION _____

SEAL OF THE BANK _____

SIGNATURE OF THE WITNESS _____

NAME OF THE WITNESS _____

ADDRESS OF THE WITNESS _____

** - 45 days after the end of the validity period of the Bid. Date should be inserted by the Employer before the Bidding documents are issued.

FORM OF BANK GUARANTEE FOR PERFORMANCE SECURITY

To

[Designation, Address of Competent Authority of Executive Organization]

WHEREAS..... (name and address of contractor) hereinafter called "the contractor" has undertaken, in pursuance of Contract 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 by a Nationalised/Scheduled bank of India 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 ₹ (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 you 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 42 days from the date of expiry of the Defects Liability Period.

Signature and seal of the Guarantor.....

Name of the Bank

Address.....

Date.....

In the presence of

1.....

(Name & Occupation)

2.....

(Name & Occupation)

*- An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.

BANK GUARANTEE FOR ADVANCE PAYMENT

To: _____ [name of Employer]

[address of Employer]

[name & No.of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, subclause 45 ("Advance Payments") of the above-mentioned Contract, _____
[name and address of Contractor] (hereinafter called "the Contractor") shall deposit with
_____ [name of Employer] a bank guarantee to guarantee his proper
and faithful performance under the said Clause of the Contract in an amount of
[amount of guarantee]¹ _____ [in words].

We, the _____ [bank or financial institution], as instructed by the Contractor,
agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely,
the payment to _____ [name of Employer] on his first demand without
whatsoever right of objection on our part and without his first claim to the Contractor, in the
amount not exceeding _____ [amount of guarantee]¹ _____ [in words].

We further agree that no change or addition to or other modification of the terms of the Contract
or of Works to be performed thereunder or of any of the Contract documents which may be
made between _____ [name of Employer] 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 remain valid and in full effect from the date of the advance payment under
the Contract until _____ [name of Employer] receives full repayment
of the same amount from the Contractor.

Yours truly,

Signature and seal: _____

Name of Bank/Financial Institution: _____

Address: _____

Date: _____

In the presence of

1.....

(Name of Occupation)

2.....

(Name of Occupation)

1 An amount shall be inserted by the bank or financial institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

**Letter of Acceptance
(Letterhead of the Employer)**

_____ (Date)

To

(Name and address of the Contractor)

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ (name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees _____ (_____) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders¹ is hereby accepted by our agency.

You are hereby requested to furnish Performance Security, in the form detailed in Clause 33.1 of ITB for an amount equivalent to ₹ _____ within 21 days of the receipt of this letter of acceptance valid up to 42 days from the date of expiry of Defects Liability Period i.e. up to _____ and sign the contract, failing which action as stated in Clause 33.3 of ITB shall be taken.

Yours faithfully,

Authorized Signature

Name and title of signatory

Name of Agency

¹Delete “corrected and” or “and modified” if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been effected.

**Issue of Notice to Proceed with the work
(Letterhead of the Employer)**

_____(Date)

To

(Name and address of the Contractor)

Dear Sirs,

Pursuant to your furnishing the requisite performance security as stipulated in ITB Clause 33.1 of ITB and signing of the Contract for (name of the Contract) at a Bid Price of Rs. _____.

You are hereby instructed to proceed with the execution of the said works in accordance with the contract agreements.

Yours faithfully,

(Signature, name and title of signatory
Authorised to sign on behalf of Employer)

FORM OF AGREEMENT

AGREEMENT

This agreement made the _____ day of _____ 20_____
 between [Designation, Address of Competent Authority of
Executive Organization] and _____ (Contractor)

AND WHEREAS the Employer invited bids from eligible bidders for the execution of certain works, viz. “[**DESCRIPTION OF WORKS: BID FOR ROAD MAINTENANCE WORKS AND ACTIVITIES OF NH No. / SH No. _____ FROM _____ TO _____ IN THE STATE OF _____ (KM. _____ TO KM. _____)]”.**

AND WHEREAS pursuant to the bid submitted by the Contractor, vide _____ (herein after referred to as the “BID” or “OFFER”) 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 the 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 pursuant to the bid submitted by the Contractor vide _____ (hereinafter referred to as “the Offer”), the employer has by his letter of acceptance no. _____ - dated _____ — accepted the offer submitted by the Contractor for the execution and completion of such works and the remedying of any defects therein, on terms and conditions in accordance with the conditions of particular application and condition included hereinafter;

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-1).

NOW THIS AGREEMENT WITNESSETH as follows:

- 1) In this agreement, works and expressions shall have the same meanings 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.
 - 1) Agreement,
 - 2) Notice to Proceed with the Work,
 - 3) Letter of Acceptance,

- 4) Contractor's Bid,
- 5) Contract Data,
- 6) Part II, Special Conditions of Contract
- 7) Part I, General Conditions of Contract
- 8) Road Maintenance Standards and Specifications, Part I and Part II, Scope of Work,
- 9) Priced Bill of Quantities, and
- 10) 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 ambiguities or discrepancy be noted then the order of precedence of these documents shall be subject to the Special Conditions of Contract as listed above.

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 respect 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 the 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 hereto have caused this agreement to be executed the day and year first before written.

The common seal of _____ was hereunto affixed in the presence of:
Or

Signed, sealed and delivered by the said Employer through his Authorized Representative and the said Contractor through his Power of Attorney holder in the presence of:

Binding Signature of Employer _____

For and on behalf of [Name of Executive Organization]

Binding Signature of Contractor _____

In the presence of

1. Name :

Address:

2. Name :

Address:

In the presence of

1. Name:

Address:

2. Name:

Address:

Qualification Information Forms

(Related to ‘Instructions to Bidders’)

INFORMATION FORM (1)

General Information

[All individual firms submitting bids are requested to complete the information in this form. Nationality information to be provided for all owners or bidders.

Where the Bidder proposes to use named sub-contractors for critical components of the Works, or for work contents in excess of 10 percent of the value of the whole Works, the information in this form should be supplied for the specialist sub-contractor(s) also.]

1)	Name of firm	
2)	Head office Address.....	
3)	Telephone	Contact
4)	Fax	
5)	Place of incorporation/registration	Year of incorporation/registration

Nationality of Owners ¹		
	Name	Nationality
1)		
2)		
3)		
4)		
5)		

INFORMATION FORM (1A)**Structure and Organization**

- 1) Constitution or legal status of the Bidder : _____
[Attach copy]
 - a) an individual
 - b) a proprietary firm
 - c) a firm in partnership
 - d) a Limited Company or Corporation
- 2) Place of Registration:
- 3) Principal place of business:
- 4) Power of Attorney of signatory of Bid:
[Attach]
- 5) Attach the Organization Chart showing the structure of the organization, including the names of the Directors and position of officers.
- 6) Number of years of experience:
 - a) as Prime Contractor (contractor shouldering major responsibility)
 - i) in India _____
 - ii) other countries (specify country) _____
 - b) in a Joint Venture
 - i) in India _____
 - ii) other countries (specify country) _____
 - c) as sub-contractor (specify main contractor)
 - i) in India _____
 - ii) other countries (specify country) _____
- 7) For how many years have your organization been in business of similar work under its present name? _____

- 8) Were you required to suspend construction
for a period of more than six months continuously
after you started?

If so, give the name of project
and give reasons therefore.

- 9) Have you ever left the work awarded to you
incomplete?

If so, give name of project and reasons for not
completing the work

INFORMATION FORM (2)**General Experience Record (Average Annual Turnover)**

Name of Bidder

To qualify, the Bidder shall be required to pass the specified requirements applicable to this form, as set out in the " Instructions to Bidders".

Each Bidder is requested to complete the information in this form. The information should contain details of annual construction/maintenance Turnover for contracts, undertaken in the last three years. The Turnover, in terms of the amount billed to Clients, shall be factored and weighted, in accordance with the method given in the Bidding Data, to bring all data to a common base for purposes of comparison.

The information is to be summarized, using this Form for each year completed or under execution by the Bidder.

Where the Bidder proposes to use named subcontractors for critical components of the works, or for work contents in excess of 10 percent of the estimated value of the whole works, the information in the following forms should also be supplied for each specialist subcontractor.

1. Total value of civil works construction & maintenance business performed in each of the the last three years (in ₹ Crore).
Refer ITB Clause 4.3A (a).
(Attach certificate from Chartered Accountant)

	Year	₹ (in crore)	Weighted INR upto price level [Year of inviting and submitting bid] (in ₹ crore)
(I)			
(II)			
(III)			
(IV) Total [(I)+(II)+(III)]			
(V) Average [(IV)/3]			

[This table is to be completed by the Bidder for themselves and also for each specialist subcontractor, as above]

INFORMATION FORM (3)

Particular Experience Record

Name of Bidder

To qualify, the Bidder shall be required to pass the specified requirements applicable to this form, as set out in the " Instructions to Bidders".

On a separate page, using the format of Form (3A), each Bidder is requested to list all contracts of a value equivalent to the value specified in **Clause 4.3 A (b) (i), (ii), (iii)** of Instructions to Bidders and shown in Bidding Data for contracts of a similar nature and complexity to the contract for which the Bidder wishes to qualify, undertaken at any one time during the last seven years. Contract Values shall be factored and weighted, in accordance with the method given in the Bidding Data, to bring all data to a common base for purposes of comparison.

The information is to be summarized, using Form (3A), for each contract completed or under execution by the Bidder.

Where the Bidder proposes to use named subcontractors for critical components of the Works, or for Work contents in excess of 10 percent of the value of the whole Works, the information in the Form 3(A) should also be supplied for each specialist subcontractor.

INFORMATION FORM 3 A

Details of Contracts of Similar Nature and Complexity

Work performed as prime contractor [work performed in the past as a nominated sub-contractor will also be considered provided the sub-contract involved execution of all main items of work described in the bid document; provided further that all other qualification criteria are satisfied (in the same name)] on works of a similar nature during the last seven years to qualify as per ITB Clause 4.3 A (b) (i), (ii), (iii)

Name of Bidder

Project Name	Name of the Employer*	Description of work	Contract No. & Date	Value of Contract (Original Currency)	Value of Contract (INR equivalent) (Crores)	Date of issue of work order	Stipulated period of completion	Actual date of completion*	Remarks explaining reasons for delay in work completion	Weighted INR value (Crores)

* Attach certificate(s) from the Engineer(s)-in-Charge.

INFORMATION FORM 4.1

(All bidders shall provide a preliminary description of the proposed work method and schedule, including drawings (if any) and charts, as necessary. The proposed methodology should include programme of executing Road Maintenance Works and Activities backed with resource planning (equipment, labour and material) duly supported with broad calculations and quality assurance procedures, safety, Health and Environment Plan at work place and arrangement for traffic in work zones proposed to be adopted justifying their capability of execution and completion of the work as per Road Maintenance Standards and Specifications, as per the Intended Date of Completion.)

INFORMATION FORM 4.2

(The Contractor's Proposed Quality Control and Quality Assurance Plan)

This shall include the Contactor's proposed SHE (Safety, Health and Environment at work place) Plan and arrangements for traffic in work zones.

INFORMATION FORM 4.3

(The Contractor's proposed methodology for maintenance along with manpower deployment and machinery deployment)

INFORMATION FORM (5)

EQUIPMENT CAPABILITIES:

Availability of key items of Contractor's Equipment essential for carrying out the works [Ref. Clause 4.3 B (b) (i) of ITB and Clause 106 of MORTH Specifications]. The Bidder should list all the information requested below.

Item of Equipment	Employer's Minimum Requirement		Bidder's Availability Proposals			Remarks(from whom to be purchased)
	No.*	Capacity	Owned/ Leased / to be procured	Nos./Capacity	Age/Condition	
Mini Hot Mix Plant- (6/10 t/hour capacity)	1					
Sensor Paver	1					
Vibratory roller (8/10 t/hour)	1					
Static Roller (8/10 t)	1					
Pneumatic Roller	1					
Bitumen/emulsion sprayer	1					
Mechanical Hydraulic Broom(1250 Sqm per Hour)	1					
Water tanker	2					
Air compressor	2					
Dewatering Pump	1					
Tipper/Dumper Trucks	2					
Insulated trucks for long distance delivery of bituminous material	1					
Mobile maintenance unit with necessary equipment for every 50 km stretch	1					
Dozer-D-15-A-15	1					
a)						

Note- 1 no. of Hot mix plant with electronic control (30-40 ton/h or any other appropriate size compatible to the job) may be hired; hiring arrangement to be demonstrated

These numbers are minimum only, and the exact numbers of equipment to be mobilized to the Project site should be in accordance with the requirements of the Contractor's Approach and Methodology duly approved by the Engineer.

For Rigid pavements, the information as per above format should be furnished in respect of the following equipment:-

For joint resealings

- i) Plough for removing old sealant.
- ii) Wire Brushes.
- iii) Sand blasting equipment, air compressor with in line filters to trap oil and water, hoses, 6 mm venturi-type tube.
- iv) Broom and/or power vacuum.
- v) Backer rod installation tool/roller wheel
- vi) Sealant applicator equipment (and Mixing Head for two component systems).
- vii) Pail mixer.
- viii) Plastic measuring beakers.
- ix) Masking Tape.
- x) Trowels.
- xi) Personal safety equipment (ie: gloves, masks, safety vest first air box etc).

For Crack Repair and Cross-Stitching

- i) Random crack saw (130 mm dia diamond blades).
- ii) Vertical spindle router (belt drive).
- iii) Single headed scabbling tool or router (crack cutter).
- iv) Template.
- v) Small portable generator.
- vi) Portable air compressor Min. 71 litres/sec at 0.55 N/mm².
- vii) Rotary impact hammer drill.
- viii) Trowels and floats.
- ix) Personal safety equipment (gloves, masks, safety vest etc).

For Spall Repair

- i) Concrete saw (170 mm to 250 mm dia diamond blades for large patches, 130 dia for small patches)
- ii) 170 to 250 Portable air compressor Min. 71 litres/sec at 0.55 N/mm².
- iii) Electric chisel.

- iv) Club Hammer (4 kg).
- v) Cold Chisels.
- vi) Pail mixer, hand held or paddle wheel.
- vii) Mixing pails, small.
- viii) Plastic measuring beakers.
- ix) Masking Tape.
- x) Hand tools, shovel, trowels, tampers and screeds.
- xi) Personal safety equipment (ie: gloves, masks, safety vest etc).

For Full Depth and Whole Slab Replacement Repairs

- i) 50-60 H.P. diesel or petrol mobile concrete saws (smaller machine may be suitable for limestone aggregate concrete).
- ii) 750 – 1000 mm dia. Diamond saw blades for full depth repair 300 - 450 mm dia Diamond saw blades suitable for partial depth cutting
- iii) Portable air compressor min 118 litres/sec at 0.55 N/mm and concrete breaking tools/jack hammer (14 kg)
- iv) Heavy duty wire cutters or bolt croppers
- v) Small portable generator
- vi) Rotary drill
- vii) Club hammer (4 to 6 kg)
- viii) Cold chisels
- ix) Drilling jig or frame.
- x) Welding equipment (for continuously reinforced slabs)
- xi) Frame for holding dowel bars in position until resin mortar hardens (jointed slabs)
- xii) Poker vibrator(s)
- xiii) Vibrating finishing beam (for levelling surface uniformly)
- xiv) Wire Tyne (for surface texturing)
- xv) Trowels, floats and arising tool

Saw blade selection

The saw blade for cutting concrete must be compatible with the output and speed of the saw, concrete strength and application.

INFORMATION FORM (6)

PROVIDE PROPOSED PROJECT ORGANIZATION CHART INDICATING THE RESPONSIBILITIES OF DIFFERENT POSITIONS.

PERSONNEL CAPABILITIES

Qualifications and experience of the key personnel required for administration and execution of the Contract [Ref. Clause 4.3 B (b) (ii) of ITB. Attach biographical data

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

Sl. No.	Position	Name	Qualification	Experience (General) Number of Years	Experience in the proposed position. Number of Years
1)	Project Manager				
2)	Site Engineer-cum- Incident/Road Property Manager				
3)	Manager (Planning)				

The details of Skilled / Unskilled Personnel required :-

Sl. No	Personnel	No. of Persons. Minimum required	No. of Persons proposed to be deployed
1)	Skilled operator for mini Hot Mix Plant	1	
2)	Skilled operator for vibratory/ static/pneumatic roller	2	
3)	Foreman for mechanical repairs	1	
4)	Skilled operator for Sensor Paver	1	
5)	Skilled operator for mobile pavement repair unit	2	
6)	Unskilled Labourer for every 50 km	10	

INFORMATION FORM (7)

Information on Bid Capacity:
(Refer ITB Clause 4.5)

A) Maximum Value of civil engineering works executed

Sl.No	Year	INR (in ₹ crore)	Weighted INR upto price level (year) (in ₹ crore)
1)			
2)			
3)			
4)			
5)			

(B1) Existing commitments and on-going works:

Description of works	Place and State	Contract No. & Date	Name & Address of Employer	Value of Contract (₹ Cr)	Stipulated Period of Completion	Value of works* remaining	Anticipated date of completion to be completed (₹ Cr)	Updated value of work remaining to be completed (₹ Cr)
1	2	3	4	5	6	7	8	9

- * Attach certificate(s) from the Engineer(s)-in-Charge/Employer

(B2) Works for which bids already submitted.

Description of works & Date of submission	Place and State	Name & Address of Employer	Estimated value of works (₹ Cr)	Stipulated Period of Completion	Date when decision is expected	Remarks, if any
1	2	3	4	5	6	7

Assessed available Bid Capacity = (A*N*3.5-B)

(Refer ITB Clause 4.5)

Assessed available Bid Capacity =

(Amount in figures in Indian Rupees)

(Amount in words in Indian Rupees)

INFORMATION FORM (8.1)

Availability of Liquid assets and/or availability of credit facilities (**ITB Clause 4.1**). List them below and attach copies of support documents.

INFORMATION FORM (8.2).

Information on arbitration/litigation history in which the Bidder is involved.

Refer ITB Clause no. 4.1 (j)

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

INFORMATION FORM (8.3)

Statement of compliance under the requirements of **Clause 4.1 (i)** of the Instructions to Bidders.

[Name of Consultancy firm who was involved in preparatory stages of works]
was involved as consultants for providing the consultancy services related to preparatory stages of the works.

INFORMATION FORM (8.4)

Bidders should provide the following affidavits/undertakings as per formats enclosed hereafter:-

- i) Affidavit
- ii) Undertaking that the Bids shall remain valid for the period specified in ITB Clause 15

AFFIDAVIT

- 1) I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.
- 2) The undersigned also hereby certifies that neither our firm M/s. _____ have abandoned any work of [Name of employer/executive organization/Ministry etc.] 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 the Department to verify this statement or regarding 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 Employer.

(Signed by an Authorised Officer of the Firm)

Title of Officer

Name of Firm

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 Officer of the Firm)

Title of Officer

Name of Firm

Date

(SECTION-4)

CONDITIONS OF CONTRACT

**(PART-I GENERAL CONDITIONS OF
CONTRACT AND CONTRACT DATA)**

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Section 4

Part - I - General Conditions of Contract

A. General

1 Definitions

1.1 Terms which are defined in the Contract Data are not also 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 Contractor's Bid.

Certificate of Completion is the Certificate issued by the Engineer upon completion of following works or parts thereof as applicable in accordance with **Clause 50**:-

- i) Periodical Renewal (PR) Works;
- ii) Pavement Riding Quality Improvement (PRQI) Works;
- iii) Flood Damage Repair (FDR) Works;
- iv) Special Repair (SR) Works

Compensation Events are those defined in **Clause 39** hereunder.

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

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

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

Contractor's Bid is the completed Bidding Document submitted by the Contractor to the Employer.

Contract Period means the duration of the Contract, specified in the Contract Data, for which the Contractor is required to maintain the Road and Road Assets, execute and complete the Road Maintenance Works in respect of the Road(s) under the Contract.

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.

Defect is any part of the Maintenance Works and Activities not completed in accordance with the Contract Specifications.

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

Defects Liability Period means the period so stipulated in the Contract Data, calculated from the Completion Date, during which the Contractor remains responsible for the rectification of any defect in the Works he has undertaken.

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 functions to a person or body nominated by him for specified functions.

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 on behalf of the Employer..

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to execute the Maintenance Works and Activities.

Flood Damage Repair (FDR) Works are the works required to reinstate the roads, drains, bridges, culverts, etc. damaged as a result of storms, rains and floods or natural calamities. The need and scope of FDR Works shall be jointly identified as a Technical Proposal by the Engineer and the contractor. For starting execution of FDR Works, the Engineer shall issue a Work Order after approval of the Technical Proposal by the Employer.

Intended Completion Date(s) is the dates on which it is intended that the Contractor shall complete the Specific Maintenance Works or any Section or part thereof as specified in the Contract Data. The Intended Completion Dates may be revised only by the Engineer by issuing an Extension of Time after the approval from Employer.

Letter of Acceptance means the formal acceptance of the Bid by the Employer.

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

Maximum Response Time means the maximum permissible time within which remedial action must be completed prior to a defect exceeding the permissible tolerance. Maximum Response Time commences from the time of earliest detection of the defect by (i) observation of the defect by the Contractor, or (ii) notification of the defect by the Engineer, or (iii) intimation of the defect by a road user.

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

Maintenance Works and Activities are what the Contract requires the Contractor to construct, install, maintain and turn over to the Employer, as covered under Routine Maintenance of Road Assets, Periodic Renewal, Pavement Riding Quality Improvement, Flood Damage Repairs and profile correction and Special Repairs as defined in the Contract Data.

Periodic Renewal (PR) Works consists of providing a bituminous wearing course on an existing bituminous surface. It may be preceded by a levelling course to correct the transverse profile of the existing road. PR Works are specific works defined in the Contract Data.

Works under Programme for Riding Quality Improvement (PRQI) consist of providing a non-bituminous/bituminous base course and a bituminous heading course. In case of PRQI works involving laying of non-bituminous base course, existing bituminous course shall be scarified.

A Levelling course shall be applied to the base course to correct transverse profile of existing road. PRQI works are specific works defined in the Contract Data.

Permissible Tolerance means the maximum permissible amount or quantity of a defect in road-asset condition that will not be exceeded at any time. If any defect exceeds the permissible tolerance, it shall be treated as "non-compliance" and the Contractor shall be paid in accordance with Sub-Clause 33.6 of GCC and Clause 10 of Section-5 (Road Maintenance Standards and Specifications).

Project Manager is a person appointed by the Contractor who is in charge of managing all activities of the Contractor under the Contract. He is also the Contractor's Representative for the purpose of this Contract.

Road means the Road or package of roads in network or scattered for which the Maintenance Works and Activities are to be carried out under the Contract.

"Road Assets" include the following:

- i) Main carriageway with shoulders (paved and/or earthen), medians, slip roads, service roads.
- ii) Road embankment including slopes, protection works, kerbs and chute drains.
- iii) Roadway in cutting, including slopes protection works, drains.

- iv) Culverts, Bridges, Over/Underpasses, Retaining walls, Guide bunds, Floor protection works.
- v) Road signs, road markings, road delineators, guard rails, safety barriers, railings, fences, parapets, kilometre stones, 200 m stones, road boundary stones.
- vi) All types of drains, trees, plantations and erosion control measures.
- vii) Road land
- viii) Any other project facility or asset forming integral part of the road(s).

Road Maintenance Standards is the collective term for the following parameters which define the condition in which the road assets are required to be maintained and other requirements regarding safety and quality of works to be complied with by the Contractor.

Service Level

Permissible Tolerance (Maximum Defective Condition)

Maximum Response Time

Rectification Standard

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.

Road Maintenance Office is the location indicated by the Contractor from which the Project Manager operates, and where the Contractor shall receive notifications.

Routine Maintenance of Road assets means maintenance of all road assets in respect of Roads under the Contract to the Road Maintenance Standards and for the period specified in the Contract Data.

Road inventory and condition data reports are those, which were included in the Bidding documents and are factual reports about the condition of road, Cross Drainage works and road signs etc. at the site.

Service Level or Service Quality Level means the defined condition in which the road assets are to be maintained by the Contractor.

Site is the area defined as such in the Contract Data, where maintenance works are to be executed.

Special Repair (SR) Works are the works which may be required to be undertaken due to damage caused to roads or to structural components of bridges / culverts by major

accidents, acts of vandalism (during bandhs / strikes etc.), earthquakes, etc. or any other works so categorised by the Employer. These works may require reconstruction/repair of damaged sections. For starting execution of Special Repair Works, the Engineer shall issue a Work Order, after it has been approved by the Employer.

Specifications means the Specifications of the Maintenance Works including the Road Maintenance Standards as per the Contract.

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.

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

Technical Documents means all drawings, and technical information of a like nature provided by the Engineer to the Contractor.

Temporary Works are works designed, constructed, installed and removed by the Contractor that are needed for Works and Activities.

Time for Completion means the time for completing the execution of maintenance works and passing the tests on completion of the Works or any Section or part thereof as stated in the Contract Data or as extended by the Engineer by issuing an Extension of Time after the approval from the Employer.

Variation is an instruction given by the Engineer in writing which varies the scope of Maintenance Works.

Work Order is an order issued by the Engineer to the Contractor authorising the execution of Periodical Renewal Works, profile correction, flood damage repair works and special repair works in accordance with **Clause 17.2**.

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

The following documents shall be deemed to form and be read and construed as part of the Contract. In case any ambiguity or discrepancy is noted, then the Contract shall be interpreted in the following order of priority:

- 1) Agreement,
- 2) Notice to Proceed with the Work,
- 3) Letter of Acceptance,
- 4) Contractor's Bid,
- 5) Contract Data,
- 6) Part II, Special Conditions of Contract
- 7) Part I, General Conditions of Contract
- 8) Road Maintenance Standards and Specifications, Part I and Part II, Scope of Work
- 9) Priced Bill of Quantities, and
- 10) Any other documents listed in the Contract Data

3 Language and Law

3.1 The language of the Contract and the law governing the Contract shall be in English.

4 Engineer's Decisions

4.1 The Employer shall designate and notify to the Contractor in writing the name of the Engineer.

4.2 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer. The Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

5 Delegation

5.1 The Engineer, duly informing the Employer, may delegate any of his duties and responsibilities to other people, after notifying the Contractor and may cancel any delegation under intimation to 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 as per Indian Law .

7 Subcontracting

7.1 The Contractor may subcontract any portion of work, up to a limit specified in Contract Data, with the approval of the Engineer but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall neither alter the Contractor's obligations, nor relieve the Contractor from any liability or obligation under the Contract.

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 for 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 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 whole of Works.
- 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 fully responsible for the acts, defaults and neglects of any of his sub-Contractor, his agents or workmen as if they were the acts, defaults or neglects of the Contractor, his agents and workmen.

7.4 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 sub-contracted.

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. The Contractor shall cooperate in such situations as well.

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

9 Personnel & Equipment

9.1 The Contractor shall employ the technical personnel named in the Contract Data or other technical persons approved by the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and abilities 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 within 15 days of issue of notice to proceed with the work, a penalty of ₹ 5000/- per day per person shall be levied for next 30 days, beyond which it shall be treated as a breach of Contract and action will be taken as per Clause 53.

9.1.1 The Contractor shall use the equipment identified in the bid along with competent operators and adequate stock of spares for smooth operations.

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.

9.3 The Contractor shall establish, within his own organizational structure, a planning unit, staffed with suitably qualified personnel. The team will be headed by a Project Manager who will be assisted by his representatives, i.e. Site Manager and Manager, Planning. The task of this unit will be:

9.3.1 To plan, and to verify continuously the degree of compliance by the Contractor with the specified Road Maintenance Standards and report the same to the Engineer in the format acceptable to the Engineer.

9.3.2 To maintain and update the road condition inventory regularly.

9.3.3 To assist the Engineer in verification of the compliance.

9.4 The Contractor's planning unit mentioned under Sub-clause 9.3 shall report the level of compliance with the required Service Levels in the standard formats acceptable to the Engineer.

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 expected risks which are (a) in so far as they directly affect the execution of the Maintenance Works and Activities included in the Contract, 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.

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, referred to in **Clause 11.1**, are the risks 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 completion of defect liability period, 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 and Materials;
- b) Loss of or damage to Equipment;
- c) Loss of or damage to property (except the Works Materials and Equipment) in connection with the Contract; and
- d) Third Party Liability Insurance
- e) Automobile Liability Insurance
- f) Workers' Compensation
- g) Employer's Liability
- h) Other Insurances

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 a debt due from the Contractor.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.

13.5 Both parties shall comply with any conditions of the insurance policies. The Contractor shall ensure that wherever applicable, its Sub-Contractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for works executed by them under the Contracts unless such Sub-Contractor(s) is / are covered by the policies taken out by the Contractor.

14 Site Investigation Reports

14.1 The Contractor, in preparing the Bid, may rely at his own risks and liability on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him.

15 Queries about the Contract Data

15.1 The [Designation of the Officer concerned in the Executive Organization] will clarify queries on the Contract Data.

16 Contractor to Construct the Works

16.1 The Contractor's obligations cover the carrying out of all Maintenance Works and Activities as defined in the Contract Data for keeping the roads in accordance with the Road Maintenance Standards. These works shall include:

- i) Routine Maintenance of road assets in respect of roads indicated in Contract Data.
- ii) Periodic Renewal/Pavement Riding Quality Improvement Works and Profile Correction Course in respect of roads indicated in the Contract Data.
- iii) Flood Damage Repair Works.
- iv) Special Repair Works.

The Contractor shall construct and install and maintain the Works in accordance with the Specifications and Drawings.

16.2 Routine Maintenance Works and Services

The Contractor shall, on a regular basis, undertake the Routine Maintenance Works and Services in accordance with the Contract and particularly in compliance with the Road Maintenance Standards and Specifications (Section-5), duly satisfying the Service Quality Levels set out therein.

16.3 Periodical Renewal (PR)/Pavement Riding Quality Improvement (PRQI) Works

PR/PRQI Works shall be carried out in accordance with the Technical Specification and drawings and details provided by the Engineer, pursuant to Sub-clause specified hereunder.

The execution of these Works shall be instructed by the Engineer, who will issue a Work Order in accordance with Clause 17, defining the required works to be carried out by the Contractor and the quantities to be executed at the unit rates/prices offered by the Contractor in his Bid for the estimated quantities shown in the Bill of Quantities. The Contractor shall confirm his acceptance by signing the Work Order.

16.4 Flood Damage Repair (FDR) Works and Special Repair (SR) Works

16.4.1 Unless the conditions described in Clause 16.4.4 are prevalent, the execution of Flood Damage Repair (FDR) Works and Special Repair (SR) Works, in the circumstances described in the Scope of Works in Section IV, shall be undertaken by the Contractor on the basis of Work Order issued by the Engineer under intimation to the Employer. In the event of any damage to Road Assets or losses occurring as a result of strong storms, rains, flooding, natural calamities, the Contractor shall forward a flood damage report to the Engineer requesting the execution of FDR works. Similarly in cases of damages to roads or structural components of bridges/culverts requiring reconstruction/repair of such damaged components, the Contractor shall forward a report to the Engineer requesting the execution of SR Works. The works to be executed shall be jointly identified by the Contractor and the Engineer.

16.4.2 In the event that the Contractor becomes aware of the need for an emergency response, based either on information from his own employees and agents, or on notification from any other party, he shall promptly make an assessment of the situation and of the losses or damages occurred, or of the possibility of the losses/damages occurring, or of traffic dislocation, or of the safety of individuals, works, services or equipment being at risk, and forward a report to the Engineer, which characterizes the situation.

16.4.3 On the basis of the said report, and on the basis of his own determination and assessment of the situation, the Engineer may promptly issue a Work Order to the Contractor, based on the rates/prices for various pay-items included in the Bill of Quantities for Rehabilitation Maintenance Works and Services. Alternatively, on the basis of his own independent notification or becoming aware of an emergency situation, the Engineer may also issue a Work Order to the Contractor.

16.4.4 In the situation where the Contractor is unable, for reasons beyond his control, to notify the Engineer of the need for emergency action for immediate restoration of traffic movement, such that a Work Order cannot be issued by the Engineer, the Contractor shall execute such emergency actions as promptly as he may deem necessary and shall, at the same time, inform the Engineer and the Employer of the event and the action being taken by him. The Contractor shall subsequently, but promptly, provide for the Engineer's approval, an analysis of the costs incurred by him in order to perform such an emergency activity. After being informed of the Contractor's chosen course of action, the Engineer shall either confirm his acceptance of that course of action, or shall issue instructions for an alternative promptly and not later than within 7 days under intimation to the Employer. In the latter case, the Contractor shall have the right to reimbursement of the expenses incurred for all related work executed up to the issue of the alternative instruction.

16.4.5 The Employer or even Government authorities may declare an Emergency Situation on the basis of local legislation. In those cases, the Engineer may also issue a Work Order for Emergency Works to the Contractor.

16.4.6 If the Contractor is unable or unwilling to do such work immediately, the Employer, on his own or on the advice of the Engineer, may do or cause such work to be done by other agents, as either the Engineer or the Employer may deem it necessary in order to alleviate an unsafe situation or to prevent further damage from occurring. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefor. If the work done or caused to be done by the Employer is work that the Contractor was liable to do under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer. Otherwise, the cost of such remedial work shall be borne by the Employer.

17 The Works to be Completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Maintenance Works and Activities 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 (Also refer to Clause 4 under Section-5 (Road Maintenance Standards and Specifications).

17.2 Work Orders

17.2.1 Profile Correction Works, PR/PRQI Works, FDR and SR Works shall be executed by the Contractor only upon issue of Work Order by the Engineer, in accordance with **Sub-Clause 17.2.2** hereunder, except as provided for under **Clause 16.4.4**.

17.2.2 Work Order shall be issued in writing and shall include, always, the date on which the Work Order is issued, signature of the Engineer, details of the works and the quantities required to be executed, the unit rates/prices (which shall be the same as offered by the Contractor in his Bid), and the required starting date and period for completion of the works covered under the Work Order. Two copies of the Work Order shall be transmitted by the Engineer to the Contractor, who shall immediately countersign one copy, annotating the date of receipt, and return it to the Engineer.

17.2.3 The Contractor shall proceed with the execution of Work Order, original, modified or confirmed, as the case may be, in accordance with the details provided with the Work Order and in conformity with the Technical Specifications and in compliance with the stated time table.

Notwithstanding the requirements of **Sub-Clause 17.2.1**, the Contractor shall remain prepared to independently initiate immediate action, pursuant to **Sub-clause 16.4.4**, in the case of any Emergency Works.

18 Approval by the Engineer

18.1 The Contractor shall prepare/propose the Maintenance Manuals as per relevant applicable Standards & Specifications and existing policies/guidelines/practices and get the same approved from the Engineer/Employer.

18.2 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.

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

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

18.5 The Contractor shall obtain approval of third parties to the design of Temporary Works by Engineer.

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

19 Site Regulations and Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site, including arrangements for smooth flow of traffic at his own cost as per guidelines of the IRC/Ministry of Road Transport & Highways. He shall provide proper barricading, diversion boards, etc. He shall be fully responsible for the safety of workers and staff at site and provide safety helmets and reflective jackets to the workers, inspecting officers and supervisors.

20 Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of 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 possession of all parts of the Site to the Contractor. If the possession of a part is not given by the date stated in the Contract Data, the Employer would be deemed to have delayed the Start of the relevant activities and this would be a Compensation Event.

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 to the Engineer and any person/persons/agency authorised by:

- a) The Engineer
- b) The Employer

23 Instructions

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

23.2 The Contractor shall permit the Engineer/Employer to inspect the Contractor's contemporary records in respect of invoice of bitumen, cement, aggregates and steel, if so ordered by the Engineer.

24 Procedure for Dispute Resolution**24.1 Arbitration**

The procedure for arbitration will be as follows:

- a) In case of Dispute or difference arising between the Employer and the Contractor relating to any matter arising out of or connected with this

contract, such disputes or differences shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The Arbitral Tribunal shall consist of three Arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so nominated by the Parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Indian Roads Congress.

- b) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above within 30 days after receipt of the notice of the appointment of its Arbitrator by the other party, then the Indian Roads Congress shall appoint the Arbitrator. A certified copy of the order of the Indian Roads Congress making such an appointment shall be furnished to each of the parties.
- c) Arbitration proceedings shall be held at [Name of Place], India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- d) The decision of the majority of Arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the Arbitral Tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings shall be borne by each party itself. The fees and expenses of the Arbitrators shall be shared equally by both the parties.
- e) Performance under the contract shall continue during the Arbitration proceedings and payments due to the Contractor by the Employer shall not be withheld, unless they are the subject matter of arbitration proceedings.

25 Programme

25.1 The Engineer shall issue promptly 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 showing the general methods, arrangements, order, and timing for all the maintenance works and activities.

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

25.3 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.

25.4 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.

26 Extension of the Intended Completion Date

26.1 The Engineer shall extend the Intended Completion Date only after the approval of [Name of the Executive Organization] 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.

26.2 The Engineer, within 14 days of receiving full justification from the Contractor for extension of Intended Completion Date, will refer to the Employer his recommendation. The Employer shall, in not more than 21 days from the date of receipt of Engineer's recommendation, communicate to the Engineer the acceptance or otherwise the Engineer shall convey the decision of the Employer to the Contractor.

27 Delays Ordered by the Engineer

27.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works. Delay/delays totalling more than 30 days will require prior written approval of the Employer.

28 Management Meetings

28.1 The Engineer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the plans and progress for the Maintenance Works.

28.2 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 during the management meeting or after the management meeting and to be intimated in writing to all those who attended the meeting.

C. Quality Control

29 Identifying Defects

29.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects those are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to uncover and test any work that the Engineer considers may have a Defect.

30 Tests

30.1 The contractor shall be solely responsible for :

- a) Carrying out the mandatory tests prescribed in Technical Specifications (Section V) and
- b) For the correctness of test (procedures), whether preformed in his laboratory or elsewhere.

30.2 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the testing charges and for any number of samples.

31 Correction of Defects Noticed during the Defect Liability Period

31.1 The works carried out shall be of very high standard, requiring no major repairs on the road for at least twelve (12) months after the date of completion of works.

31.2 If any defects including shrinkage, cracks, other faults appear in the works within the period specified hereunder after issue of "Taking over" certificate, the Engineer shall give notice to the Contractor of any defects before the end of the Defects Liability Period. The Defects Liability Period shall be extended for as long as the defects remain to be corrected.

31.3 Every time notice of a defect is given, the Contractor shall correct the notified defect at his own cost within the length of time specified in the Engineer's notice. If the contractor is in default, the Engineer shall cause the same to be made good by other agencies and deduct the expense from any sums that may be due to the Contractor.

31.4 The Defects Liability Period is not applicable to Routine Maintenance Works, as the correction of inadequate provision of such works or services is covered by the requirements for the achievement of Service Quality Levels, under the Supplementary Specifications (Section V).

31.5 For all other works, 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 48**, unless specified otherwise in the Special Conditions of Contract.

31.6 If during the Defects Liability Period any defect is found in the design, engineering, materials and workmanship of the Works and Services executed by the Contractor, then (in pursuance of **Sub-Clauses 31.8 to 31.11**) the Contractor shall promptly, in consultation and agreement with the Engineer, will appropriately remedy such defects at its cost, or repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defects as well as any damage to the Road caused by such defects.

31.7 The Contractor's obligations under **Clause 31** shall not apply to

- a) any material that are supplied by the Employer, and normally consumed in maintenance, or have a normal life shorter than the Defects Liability Period stated herein;
- b) any design, Specification or other data, supplied or specified by or on behalf of the Employer or any matter for which the Contractor has disclaimed responsibility herein;
- c) any other material supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under **Sub-Clause 31.10**.

31.8 The Employer, or the Engineer, shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer or the Engineer shall stipulate, in the notice, the time period within which the Contractor should remedy the defect

31.9 The Employer shall afford the Contractor all reasonable opportunity to inspect the defect(s) Noticed, as well as provide all necessary access to the Facilities and the Site to enable him to perform his obligations under **Clause 31**.

The Contractor may remove from the Site any Plant and Equipment or any part of the Facilities that are defective, if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.

31.10 If the Contractor fails to commence the work necessary to remedy such defects or any damage to the road caused by such defect, within the time stipulated in the **Sub-Clause 31.8**, the Employer may, following notice to the Contractor, proceed to do

such work, and the actual costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the Security Deposit. Otherwise, it shall be treated as a debt due.

31.11 If the road or any part thereof cannot be used (or if used then with some attendant difficulties or deficiency by reason of such defect or deficiency and/or making good of such defect or deficiency, the Defect Liability Period of the road or such part, as the case may be, shall be extended by a period equal to the period during which the road or such part could not be used because of any of the aforesaid reasons.

32 Uncorrected Defects

32.1 If the Contractor fails to correct a Defect, to the satisfaction of the Engineer, within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected. The Contractor will pay to the Employer this amount, on correction of the Defect together with 20 percent additional costs as the damages.

D. Cost Control

33 Bill of Quantities

33.1 The Bill of Quantities shall contain : -

- i) Lump-sum prices for Routine Maintenance of Road Assets;
- ii) Unit price for Periodical Renewal Works and Pavement Riding Quality Improvement Works;
- iii) Unit rates for Profile Correction Course, Flood Damage Repair Works and Special Repair Works.

33.2 The BOQ items above are provisional and Contractor shall have no claim whatsoever in case the quantities executed are either in excess or less than the provisions in the BOQ.

33.3 Routine Maintenance Works shall be measured and billed separately and will be remunerated by lump-sum amount during the entire period of contract as stated in the BOQ.

33.4 PR/PRQI Works will be paid on the basis of the lengths or area completed in accordance with the approved programme and the unit prices stated in the BOQ, subject to issue of work order by the Engineer.

33.5 Other Maintenance Works, such as Profile Correction course, FDR/SR Works will be taken up and paid on the basis of work order issued by the Engineer which will include quantities of various items to be executed with reference to the unit rates provided in the BOQ.

33.6 Measurement for Payments

33.6.1 Routine Maintenance of Road assets will be measured per km. However, payment for Routine Maintenance of road assets shall be effected by compliance with the Maintenance Standards pursuant to Maintenance Activities and shall be billed in fixed monthly amounts (Lump-Sum amount), as per the Bill of Quantities for Maintenance Activities, beginning from the Start Date. Payments will be made with reduction if the Maintenance standards are not achieved as defined in the specifications. The reductions for non-compliance with the Maintenance standards will be applied on the basis of monthly inspection, in accordance with the methodology specified in the Road Maintenance Standards and Specifications (**Section 5**).

33.6.2 Profile Correction Course shall be measured on the basis of volume of bituminous mix, used for the purpose.

33.6.3 Periodical Renewals/Pavement Riding Quality Improvement Works will be measured in terms of area or length as indicated in BOQ.

33.6.4 Flood Damage Repairs/Special Repair Works will be measured as per items of works given in the work order, as per applicable specifications.

34 Variations

34.1 The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order in writing, variations within the scope of the Works he considers necessary during the progress of Works, only after approval from [Name of Executive Organization]. Such Variations shall form part of the Contract and the Contractor shall carry them out and include them in updated Programmes produced by the Contractor. Verbal orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

35 Payments for Variations

35.1 If rates corresponding to Variation items are given in the Bill of Quantities, the Contractor shall carry out such work at the same rate.

35.2 If the rates corresponding to Variation items are not given in the Bill of Quantities, the Engineer shall derive the rate from similar items in the Bill of Quantities.

35.3 If the rate for Variation items cannot be determined in the manner specified in **Clause 35.1 or 35.2**, the Contractor shall, within 14 days of the issue of Variation Order, inform the Engineer the rate which he proposes to claim, supported by his analysis of such rates. The Engineer shall assess such rates and determine the rates based on prevailing market rates within one month of the submission of the rate proposed by the Contractor. An approval will then be taken from **[Name of Executive Organization]**. 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. The rate as approved by the Employer shall be final and binding on the Contractor.

36 Cash Flow Forecasts

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

37 Payment Certificates

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

37.2 The Engineer shall, within 14 days of its receipt, check the Contractor's monthly statement and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question.

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

37.4 The value of work executed shall comprise the completed value of quantities of the items as per in the Bill of Quantities.

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

37.6 The Engineer/Employer 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.

37.7 The final bill shall be submitted by the Contractor within one month of the actual date of completion of work; otherwise the Engineer's certificate of the measurement and of the total amount payable for work accordingly shall be final and payment made accordingly within a maximum period of sixty days thereafter (i.e. after submission of final bill).

38 Payments

38.1 Payments shall be adjusted for the deductions such as advance payments, security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay to the Contractor, within 28 days of the date of each certificate, the amount certified by the Engineer.

Payments for Routine Maintenance shall be made only upto the stipulated date of completion, unless the contract is further extended or the Engineer certifies to continue Routine Maintenance works. Prior approval of Employer shall be obtained for such cases.

38.2 The Employer may appoint another authority, as specified in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor) to make payment to the Contractor, as certified by the Engineer.

38.3 Items of the Works for which no rate or price has been entered in the Bill of Quantities, will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

39 Compensation Events

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

- a) The Engineer orders a delay or delays exceeding a total of 30 days.
- b) The effects on the Contractor of any of the Employer's Risks.

39.2 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, after approval of Employer, whether and by how much the Intended Completion Date shall be extended.

40 Taxes

40.1 The rates quoted by the Contractor shall be deemed to be inclusive of all the taxes such as the sales tax, service tax and other levies like duties, royalties, cess and toll, etc. 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 only in regard to the deduction of such taxes at source as per applicable law.

41 Currencies

All payments shall be made in Indian Rupees.

42 Price Adjustments

The price adjustments shall be governed as per the stipulations provided in the Contract data.

43 Security Deposit/Retention Money

43.1 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.

43.2 The security deposit/retention money and the performance security aggregating to 10 percent of the Contract price (plus additional performance security for unbalanced bids in accordance with Clause 46 of General Conditions of Contract pursuant hereto, if obtained from the Contractor earlier) will be released to the Contractor when the Defects 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.

43.3 If the contractor so desires, then the Security deposit/Retention money can be released earlier at an interest rate @ 6 percent p.a on submission of unconditional Bank Guarantee at the following three stages:-

- a) At a point after the progress of work in financial term (gross value of work done) has reached 25 percent of the contract amount.
- b) At a point after the progress of work in financial term (gross value of work done) has reached 50 percent of the contract amount
- c) After the retention money has been deducted to the full value.

The maximum limit of such releases at the relevant stages shall not, however, exceed the pro-rata amount calculated based upon the limits of gross value of the financial progress mentioned at the above three stages.

44 Liquidated Damages and Penalties

44.1 The Contractor guarantees that it shall attain Completion of Works and Services (or any part thereof for which a separate time for completion is specified in the Contract Data), within the Time for Completion specified in the Contract Data pursuant to **Clause 17**, or within such extended time to which the Contractor shall be entitled under **Clause 28** hereof.

44.2 If the Contractor fails to attain Completion of Works and Services or, if applicable, any Section thereof, in accordance with **Clause 17**, within the relevant Time for Completion or any extension thereof, under **Clause 28**, the Contractor shall pay to the Employer liquidated damages, for such default and not as a penalty (which sum shall be the only

monies due from the Contractor for such default) for every day or part of the day which shall elapse between the relevant Time for Completion and the date stated in a Taking Over Certificate of the whole of the Works and Services or the relevant Section, in accordance with the Contract Data. Once the "aggregate liability" is reached, the Employer may consider termination of the Contract, pursuant to **Sub-Clause 53.2**. The payment of such damages shall not relieve the Contractor from his obligation to complete the Works and Services, or from any other of his obligations and liabilities under the Contract.

44.3 If, before the Completion Date of the whole of Works or, if applicable, any Section, a Taking Over certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate of Completion, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

The Contractor guarantees that during the Performance Test and Inspections, the Highway(s) and all parts thereof shall attain the Service Quality Levels specified in the corresponding Technical Specifications, subject to and upon the conditions therein specified.

44.4 If, for reasons attributable to the Contractor, the minimum level of Service Quality Levels specified in the corresponding Technical Specification are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the Highway or any part thereof as may be necessary to meet at least the minimum level of such Standards. The Contractor shall notify the Engineer upon completion of the necessary changes, modifications and/or additions, and shall request the Engineer to repeat the Test until the minimum level of Standards have been met with. If the Contractor eventually fails to meet the minimum level of Performance Standard, the Employer may consider termination of the Contract, pursuant to **Sub-Clause 53.2**.

44.5 If, for reasons attributable to the Contractor, the Service Quality Levels relating to the Works specified in the corresponding Technical Specification are not attained, either in whole or in part, the Contractor shall, at the Contractor's choice, either

- (a) make such changes, modifications and/or additions to the Works and Services or any part thereof that are necessary to attain the Service Quality Levels at its cost and expense, and shall request the Engineer to repeat the Test, or

- (b) pay penalties to the Employer in respect of the Works and Services which fail to meet the Service Quality Levels in accordance with the provisions in the corresponding Technical Specification.

44.6 Upon the payment of penalty under **Clause 44.5** by the Contractor, the Engineer shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the penalties have been so paid.

45 Advance Payment

45.1 The Employer will make advance payment (or mobilisation advance) to the Contractor against provision of an Unconditional Bank Guarantee by the Contractor in a form and by a Commercial bank acceptable to the Employer in amounts equal to the advance payment up to 10 percent of the Contract Value.

The guarantee shall remain effective until the advance payment has been repaid, but the amount of guarantee shall be reduced progressively by the amounts repaid by the Contractor.

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

45.3 The advance payment shall be repaid with an interest @ SBI PLR applicable on the date of release of advance by deducting from payments otherwise due to the Contractor. The advance will be recovered from first six running bills in equal instalments and the interest will be charged from seventh running bill. 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.

46 Securities

46.1 The Performance Security equal to five percent of the contract price and additional security for unbalanced bids shall be provided by the Contractor 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 scheduled commercial bank. The Performance Security shall be valid until a date 42 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 42 days from the date of issue of the certificate of completion.

47 Cost of Repairs

47.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of Defects Liability Period shall be

remedied by the Contractor at his own cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

48 Completion

48.1 The whole of the Works and if applicable, any Section or part thereof required to be completed within a particular time as stated in the Contract Data shall be completed within the time so stated in the Contract Data or such extended time as may be determined by the Engineer and duly approved by the Engineer.

48.2 The Contractor shall request the Engineer to determine and issue a certificate of Completion of Works, and the Engineer will do so upon deciding that the Works are completed.

49 Taking Over

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

50 Final Account

50.1 The Contractor shall submit to the Engineer a detailed account of the total amount that the Contractor considers and believes payable under the Contract before the end of Defects Liability Period. The Engineer shall issue a Defects Liability Certificate and will also 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.

51 Day works and Deposit Works

51.1 Day works

51.1.1 If applicable, the Day works rates in the Contractor's Bid shall be used for additional amount of works only when the Engineer or his delegated representative has given a written Job Instruction/Memorandum of any work.

51.1.2 The Contractor shall be paid for Day works subject to obtaining a signed Job Instruction/Memorandum from the Engineer or his delegated representative. The Contractor can not

be executed under Routine Maintenance and also either it is not covered under other items of works under Works Schedule or the quantities approved against the concerned item(s) in Works Schedule have been completed.

51.1.3 The provision for Day works shall be operated by the Engineer only after prior approval of the Employer.

51.2 Deposit Works

51.2.1 The Employer may carry out Deposit Works (i.e. the works required to be executed as per the requirements of other Govt. Departments/agencies, such as laying of OFC cables, pipelines, etc. at the cost of such Govt. Departments/agencies; requirements for such works may arise after award of Contract), provided the defects, if any, arising in the Project scope shall be made good at the cost of such Govt. departments/agencies.

51.2.2 In case of any delay in performance under the Contract, which is attributable to execution of such deposit works, the contractor shall be allowed a reasonable period of extension of time to perform his obligations under the contract (for the particular stretch of road wherein such deposit works have been carried out), subject to certification of the same by the Engineer, with detailed justification, and acceptance thereof by the Employer.

52 Maintenance Records

52.1 *The Contractor shall furnish inventory data of the road(s) as on 1st April of every year throughout the duration of the Contract.*

52.2 If the Contractor does not supply the Inventory Data, the Engineer shall withhold from each monthly payment/for each default the amount stated in the Contract Data from payments due to the Contractor.

53 Termination

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

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

A) Fundamental Breaches by the Contractor

- a) the Contractor stops work or grossly neglects Routine Maintenance Works and Services 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 reconstruction 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 remedy the defect and correct it within the period of time determined by the Engineer;
 - d) the Contractor does not maintain a Security Deposit as per clause 43.
 - e) the Contractor has delayed the completion of Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in **Clause 44**;
 - f) the aggregate liability of the Contractor to the Employer, exceeds the total amount specified in the Contract Data, provided that this limitation shall not apply to the cost of repairing or replacing defective works and equipment.
 - g) the Contractor fails to provide insurance cover as required under **Clause 13**;
 - h) if the Contractor, in the judgement of the Employer, has engaged in the corrupt or fraudulent practices as defined in **Clause 35** of the Instruction to Bidders in competing for or in executing the Contract.
 - i) if the Contractor fails to set up a field laboratory with the prescribed equipment, within the period specified in the Contract Data;
 - j) if the Contractor does not deploy any of the personnel stated in Contract Data within 45 days of issue of notice to proceed; and
 - k) The Contractor violates the provisions of Child Labour (Prohibition & Regulation) Act, 1986.
 - l) Any other fundamental breaches as specified in the contract data.
- B) Fundamental Breaches by the Employer**
- a) the Engineer instructs the Contractor to delay the progress of Works and the instruction is not withdrawn within 28 days;
 - b) a payment certified by the Engineer is not paid by the Employer to the Contractor within 56 days of the date of Engineer's certificate;

53.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed above under **Sub-Clause 53.2**, the Engineer shall decide whether the breach is fundamental or not.

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.

54 Payment upon Termination

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 work done and Materials ordered less advance payments received up to the date of 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.

54.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of work done, and a pre-determined amount specified in the contract data to cover the reasonable cost of removal of Equipment and repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the Contract, and less taxes due to be deducted at source as per applicable law.

55 Property

55.1 All Materials on 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 default.

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, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

57.2 The Contractor shall, if required 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 Site and such other information as the Engineer may require.

57.3 The Contractor's personnel including equipment operators shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove or cause to be removed any person employed on the site or the works, including the Contractor's representative, if applicable, who

- a) persists in any misconduct or lack of care
- b) Carries out duties incompetently or negligently
- c) Fails to conform with any provision of the contract
- d) Persists in any conduct which is prejudicial to safety, health or protection of the environment

If appropriate, the contractor shall then appoint or cause to be appointed a suitable replacement person

58 Compliance with Labour Regulations

58.1 During continuance 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 passed or notification that may be issued 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 in Appendix to Part I General Condition of Contract.) 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 thereunder, 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 Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer 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.

In no case shall the employees of the Contractor and the Sub-Contractor be treated as the employees of Employer at any point of time.

59 Drawings and Photographs of the Works

59.1 The Contractor shall do photography/video photography of the site firstly before the start of work, secondly mid-way in the execution of different stages of work and lastly after the completion of each item of 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, except those permitted under **Clause 59.1**, shall be taken or permitted by the Contractor to be taken by any of his employees or any employees of his sub-Contractors without the prior approval of the Engineer in writing. No photographs/ video photography shall be published or otherwise circulated without the approval of Engineer in writing.

60 The Apprentices Act, 1961

60.1 The Contractor shall duly comply with the provisions of the Apprentices 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.

Appendix - A

SCOPE OF WORK

1 Objectives

The fundamental objectives of the Contract are to undertake the maintenance of assets on a Highway Corridor, forming part of the Highway Network entrusted with [Name of Employer/concerned Executive Agency], the identity and extent of which are stated in the Contract Data, and to implement various capital Improvement Works within that Corridor, over a finite period of time.

2 Maintenance

2.1 Routine Maintenance Works will be undertaken over the full width of the right of way, in order to maintain the following asset categories in a fit state for all traffic, including pedestrians and shall consist of organizing and providing all labour, material, plant and equipment necessary, as per the Technical Specifications and other Contract requirements, with the specific purpose of bringing the assets to the Service Quality levels defined in Section V, namely:

- Maintenance of all categories of Pavement and Main Carriageway (including but not limited to: filling and carrying out repairs of potholes, repair cracks, joints, spalls, clearing of litter, removal of dead animals and removal of obstructions etc.).
- Maintenance of Earthen Shoulders (including but not limited to: correction of shoulder drop off, filling of depressions, cleaning of litter etc.).
- Maintenance of Footpaths, Separators, Medians, and Islands (Including but not limited to: closing all unauthorized breaches, and keeping footpaths clean off litter and obstructions etc.)
- Maintenance of Embankments/side slopes
- Maintenance and Repairs of fencing (rust free maintenance, repair of breaches etc. of mild steel and tubular steel posts etc.)
- Maintenance and Repairs of Crash Barriers (including but not limited to: repair, rehabilitation and maintenance in good serviceable conditions of Concrete Crash barriers and Metal Beam Crash Barriers)
- Maintenance and Repairs of Traffic Signs, Road Markings, km Stones, 200 m Stones, Road Delineators etc. (including but not limited to: keeping them clean and visible), Guard Stones.

- Maintenance of Surface and Subsurface drains (including but not limited to: keeping drains free of obstructions, clearing vegetation and obstructions from water courses, maintaining free flow and maintaining proper lines and levels)
- Maintenance of bridge railing, bearing, expansions joints, clearing of vegetation from structures, pruning of trees.
- *Cleansing of waterways through culverts, Cross Drains including the removal of obstructions to flow.*
- *Maintenance of Horticulture, Landscaping (Including but not limited to cutting grass, keeping horticulture free of weeds, maintaining light poles, damaged light bulbs etc.)*
- Maintenance of facilities (including but not limited to maintenance of toll plazas, toll booths, administrative buildings, bus stops and lay bays etc. as per required Service Quality Levels)

The Contractor is responsible for undertaking all Routine Maintenance that is set out in this Contract, without requiring the intervention or instruction of the Engineer, other than that the latter will undertake inspections to assess compliance with the Service Intervention Levels, as a prerequisite to certifying payment. The Contractor is therefore responsible for choosing the methodology which is the most efficient and cost effective, whilst at the same time delivering the Service Quality Levels.

The Bill of Quantities for Routine Maintenance and Services is based on the principle of monthly Lump Sum payments to be made for each item of work undertaken in compliance with the Contract.

2.2 Flood Damage Repair Works or Special Repair Works (FDR & SR) will become necessary in order to respond to and to remedy unexpected damage to, or obstruction of, part(s) of the Highway, as a result of natural phenomena such as strong storms, rains, earth-slides, rockslides, subsidence, washouts, flooding, earthquakes, etc., or of vehicular and other accident, acts of vandalism which either restricts or impedes the normal flow of traffic on the Highway, or that affects the safety of road users or of other parties on and adjacent to the Highway.

Whenever he becomes aware of the need for FDR/SR Works, the Contractor will be responsible for so advising the Engineer, so that the latter may consider issuance of a Works Order based on his determination of the measures that are required to be implemented. The Contractor may, under the circumstances of **Clause 16.4.4** of the GCC, himself initiate FDR/SR Works, for which he will be reimbursed.

The Bill of Quantities for Reactive Maintenance Works, based on unit measurement, contains the estimated volume of work which it is expected will be necessary during the period of the Contract (without extension).

3 Periodical Renewal (PR)/Pavement Riding Quality Improvement (PRQI) Works

Where provided for in the Contract, the Contractor will from time to time be instructed to undertake PR/PRQI Works, as part of a continuous programme intended to provide better riding quality, enhanced safety, improved traffic flows, etc. Details will be made available by the Engineer, who, from time to time, by issuing Work Orders for the Improvements, pursuant to the GCC and Specifications.

Reimbursement will be based on the items, estimated quantities, and unit rates, included in the relevant Bill of Quantities.

4 Preparation of Maintenance Manuals

The Contractor shall prepare/propose the Maintenance Manuals as per relevant applicable Standards & Specifications and existing policies/guidelines/practices and get the same approved from the Engineer/Employer.

Contract Data to General Conditions of Contract

	Clause Reference
Items marked “N/A” do not apply in this Contract.	
1) The Employer is	[CI.1.1]
[Competent Authority, Designation and Address]	
Name of Authorized Representative : [__]	
2) The Engineer is :	
Designation:	
Address:	[CI.1.1]
3) The Intended Completion Date for the whole of Works is	
[Contract duration in months], months from start date.	[CI.1.1, 17&26]
4) The Site is located at [Project Section, chainage, NH/SH No., State].	[CI.1.1]
5) The Start Date shall be within 15 days after the date of issue of the Notice to proceed.	[CI.1.1]

- 6) a) The name and identification number of the Contract is : [CI.1.1]

SHORT TERM IMPROVEMENTS AND ROUTINE MAINTENANCE OF
2/4 LANE SECTION OF NH No./SH No. _____ FROM _____
TO _____ IN THE STATE OF _____ (KM. _____
TO KM. _____).

- b) The Works consist of "Road property management, Engineering improvement, Road Maintenance and Toll Collection under short term improvement and maintenance of 2/4 lane section of NH No./ SH No. ____ from ____ to ____ (km ____ to km ____) in the State of _____". [CI.1.1]

[CI. 2.3.6. of Road Maintenance Standards under Section 5]

- 7) a) The law which applies to the Contract is the law of Union of India. [CI.3.1]
b) The language of the Contract documents is English [CI.3.1]
8) The limit of subcontracting is 50 percent of initial contract price. [CI.7.1]
9) A. The Technical Personnel are: [CI.9.1]

Sl. No	Personnel	Qualification	Particular Experience (minimum requirement)	No. of Persons.
1)	Project Manager	B.E. (Civil) + 7 Years Exp.	5 years on Major Highway works & bridge construction/ maintenance work	1
2)	Site Engineer-cum-Incident/Road Property Manager	B.E.Civil + 3 Years Exp. Or Diploma + 8 years Exp.	3 years on highway construction/ maintenance work	1
3)	Manager (Planning)	B.E. Civil + 3 Years Exp. Or Diploma + 8 years Exp.	3 years on highway construction/ maintenance work	1

- 10) Amount for insurance are: [CI.13.1]

- a) Rupees equivalent to Contract price.
- b) Rupees equivalent to 5 percent of Contract price.
- c) Rupees equivalent to 5 percent of Contract price
- d) Rupees 20 lakhs for multiple incidents.

And deductible as per premium rate.

11) The Period during which the Works and Services are to be provided:

- The Routine Maintenance Works and Services are to be provided, from the Start Date, for a total period of [duration of the Contract in months] months.

This period may be extended by mutual consent of the two parties to the Contract, for a further period of up to Twelve (12) months [Cl. 17.1]

12) The Intended Completion of the Contract will be at the conclusion of the scheduled Contract Period given in Clause 11.1, plus any defect liability period which remains to be completed, and is to be confirmed from time to time, as necessary, by the Engineer [Cl. 17.1]

13) The Contractor is obliged to prepare and to furnish to the Engineer for approval the following documents

- a) Appropriate "Methodology", consisting of procedures, instructions, formats, etc.
- b) Working Drawings and detail drawings for works not furnished by the Employer. Such drawings shall not incorporate any changes from the requirements of contract plans, specifications and special provisions unless the changes are specifically described in writing, together with justification, and are approved in writing by the Engineer.
- c) Working drawings shall consist of shop detail, erection and all such details as will reasonably be required to successfully undertake works and services. These shall include, where necessary, plans for items such as, bracing, centering, form work, masonry, layout diagrams and bending diagrams for reinforcing steel when necessary or when requested. Such drawings shall be submitted with adequate supporting design calculations.
- d) A detailed report providing adequate details on the general methods, arrangements, order and timing of all activities within the Scope of Work including method statements that may be required from time to time during the duration of contract.
- e) Method Statements for the following shall be specifically provided:
 - Repair of Potholes
 - Repair of Pavement Cracks in Flexible Pavement
 - Repair of cracks in Concrete Pavement
 - Repair of spalls in Concrete Pavement

- Repair of joints in Concrete Pavement
 - Repair of Guard Rails
 - Repair of Drains
 - Repair and Rehabilitation of damaged facilities and buildings that form part of the Site
- f) Arrangement for safety of workers and road users at work sites.
- g) Safety, Health and Environment Plan at work place [Cl. 18]

14) The Defects Liability Period for various categories of work, counted from the Date of Substantial Completion, stated in the relevant Taking Over Certificate, shall be as follows:

Works Order issued for asphalt pavement: *12 months*

Full depth repairs, partial depth repairs, replaced sealants and patch repairs with epoxy mortar for rigid pavements: *24 months* [Cl. 31]

15) **Monthly Lump sum payment for Routine Maintenance**

Monthly lump sum payment for Routine Maintenance shall be adjusted for Price Adjustment as under: -

a) During the first year (12 months period beginning from the Start Date), no price adjustment shall be made.

b) During the second year (12 months period after the end of first year), the monthly lump sum payments shall be adjusted for changes in rates and prices of various inputs as per the formula given below:

$$V = P_x (W_1 - W)/W$$

V = Increase or decrease in the monthly lump sum payment.

P = Monthly lump sum payment due to the Contractor

W = All India Wholesale Price Index (all commodities) at 28 days prior to the last date of submission of Bids.

W_1 = All India Wholesale Price Index (all commodities) on the first day of the second year.

c) During the third year (12 months period after the end of second year), the monthly lump sum payments shall be adjusted for changes in rates and prices of various inputs as per the formula given above in Sub-

Clause 42.1. (c), with the modification that W_1 shall be All India Wholesale Price Index (all commodities) on the first day of the third year. [Cl. 42.1]

16) Price Adjustment for Works other than Routine Maintenance

- a) The price adjustment shall apply for the work done from the Start Date upto the end of Intended Completion Date or until extended time granted by the Engineer.
- b) The price adjustment shall be determined during each month for bitumen and other inputs
- c) Adjustment for Bitumen Component:

Price adjustment for increase or decrease in the cost of bitumen/emulsion shall be paid in accordance with the following formula:

$$V = (Q \times B) \times (B_1 - B)/B$$

V = Increase or decrease in the cost of bituminous work (in ₹) during the month under consideration due to change in the rate of bitumen.

Q = Quantity of bitumen (tonnes) used during the month as determined on the basis of the minimum quantity of bitumen specified for the work as per Specifications.

B = Official retail price of bitumen (₹/ton) at the nearest location of IOC depot on 28 days prior to the last date of submission of Bids.

B_1 = Official retail price of bitumen (₹/ton) at the nearest location of IOC depot on 28 days prior to the last of the period to which a particular interim payment certificate is related.

- d) Adjustment for all other inputs (labour, materials, plant and machinery, fuel, lubricants, spares, etc.)

Price adjustment for increase or decrease in the cost of all other inputs shall be paid in accordance with the following formula:

$$V_o = R_o \times (W_m - W)/W$$

V_o = Increase or decrease in the cost of work during the month under consideration due to changes in rates for all inputs other than bitumen.

R_o = Value of work done during the month excluding bitumen component for which price adjustment considered separately in accordance with **Sub-Clause 42.2. (c)** above. ' R_o ' will include the amount of secured

advance granted for materials other than bitumen, if any, during the month, less the amount of secured advance recovered.

$W =$ All India Wholesale Price Index (all commodities) on 28 days prior to the last date of submission of Bids.

$W_m =$ All India Wholesale Price Index (all commodities) for the month under consideration. [Cl. 42.2]

17) To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of contract clauses, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs. [Cl. 42.3]

18) Base Date for various indices etc. for Price Adjustments shall be the 28th Day prior to the last Date of Bid submission. [Cl. 42.4]

19) Liquidated Damages shall apply to Work Orders [Cl. 17.2] - 2 percent of the total value of each particular Work Order, per day or part thereof, but not totaling in excess of 25 percent of that value. [44.2]

20) The aggregate Liability shall not exceed 10 percent of the Contract Price [44.2]

21) The standard form of Performance Security acceptable to the Employer Shall be an unconditional Bank Guarantee of the type as presented in the Bidding Documents. [Cl. 46.1]

22) The date by which inventory data in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be. [Cl. 52]

23) The amount to be withheld for failing to supply inventory data by the date required is ₹ [____] Lakh. [Cl. 52.1]

24) a) The period for setting up a field laboratory with the prescribed equipment is 30 days from the date of notice to start work. [Cl. 53.2 (k)]

25) The percentage to apply to the value of work not completed representing the Employer's additional cost for completing the work shall be 20 percent. The Performance Security shall also be forfeited if the Contract is terminated because of a fundamental breach of Contract by the Contractor. [Cl.54.1]

26) The reasonable cost of removal of equipment and repatriation of the Contractor's personnel employed solely on the works in the event of termination of the contract at the Employer's convenience or because of a fundamental breach of contract by the Employer is to be treated as ₹ [____] lakh. [Cl.54.2]

Appendix –B

Addendum to General Conditions of Contract

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

- 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 if an employee has completed the prescribed minimum years (five years) of service or more or on death the rate of prescribed minimum days' (15 days) wages for every completed year of service. The Act is applicable to all establishments employing the prescribed minimum number (10) or more employees.
- c) **Employee's P.F. and Miscellaneous Provision Act 1952:** The Act provides for monthly contributions by the Employer plus workers at the prescribed rate (10 percent or 8.33 percent). 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, 1961:** - 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 minimum prescribed (20 or more) numbers of 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 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 minimum prescribed (say, 20 or more) number of 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 minimum prescribed number of persons (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 employees. 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 minimum prescribed number of labour (say, five or more) inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in an 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 employ the minimum prescribed (say, 10 or more) number of workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2 percent 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 to 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 minimum prescribed number of persons (say, 10 persons or more) with aid of power or another minimum prescribed number of persons (say, 20 or more persons) without the aid of power engaged in manufacturing process.

(SECTION-4)

CONDITIONS OF CONTRACT

**(PART - II - SPECIAL
CONDITIONS OF CONTRACT)**

Section 4 (Part - II) - Special Conditions of Contract

(These conditions are to be read with the
General Conditions of Contract set out in Section-4)

Additional Clauses may be added as per project specific requirements.

(SECTION-5)

**ROAD MAINTENANCE
STANDARDS
AND
SPECIFICATIONS**

ROAD MAINTENANCE STANDARDS AND SPECIFICATIONS

Preamble

The Road Maintenance Standards and Specifications shall be read in conjunction with all other documents constituting the Contract viz. Bid Notice, Instruction to Bidders, Conditions of Contract, Bill of Quantities and other related documents mentioned in the Bidding Documents.

General

The Standards and Specifications for the Road Maintenance Works and Activities as described hereinafter shall comprise of the following:

Part-I : Road Maintenance Standards

Part-II : Specifications for Road Maintenance Works

PART - I

ROAD MAINTENANCE STANDARDS

1 DEFINITIONS

“Road Maintenance Standards” is the collective term for the following parameters which define the condition in which the road assets are required to be maintained and other requirements regarding safety and quality of works to be complied with by the Contractor.

Service Level

Permissible Tolerance (Maximum Defective Condition)

Maximum Response Time

Rectification Standard

“Service Level” or “Service Quality Level” means the defined condition in which the road assets are to be maintained by the Contractor

“Permissible Tolerance” means the maximum permissible amount or quantity of a defect in road-asset condition that will not be exceeded at any time. If any defect exceeds the permissible tolerance, it shall be treated as “non-compliance” and the Contractor shall be paid in accordance with Sub-Clause 33.6 of GCC and Clause 10 of this Section.

“Maximum Response Time” means the maximum permissible time within which remedial action must be completed prior to a defect exceeding the permissible tolerance. Maximum Response Time commences from the time of earliest detection of the defect by (i) observation of the defect by the Contractor, or (ii) notification of the defect by the Engineer, or (iii) intimation of the defect by a road user.

“Rectification Standard” means the specifications of materials and methods to be followed by the Contractor for rectification of defects. The Rectification Standards are given in Part -II of this Section.

“Road Assets” include the following:

- i) Main carriageway with shoulders (paved and/or earthen), medians, slip roads, service roads.
- ii) Road embankment including slopes, protection works, kerbs and chute drains.

- iii) Roadway in cutting, including slopes protection works, drains.
- iv) Culverts, Bridges, Over/Underpasses, Retaining walls, Guide bunds, Floor protection works.
- v) Road signs, road markings, road delineators, guard rails, safety barriers, railings, fencings, parapets, kilometer stones, 200 m stones, road boundary stones.
- vi) All types of drains, trees, plantations and erosion control measures.
- vii) Road land
- viii) Any other project facility or asset forming integral part of the road(s).

2 Road Maintenance Works and Activities to be carried out by Contractor

2.1 Notwithstanding the provisions of **Sub Clause 16** of the General Conditions of Contract, the works to be carried out by the Contractor include:

- i) Routine Maintenance of the road assets to the prescribed Road Maintenance Standards. This includes all maintenance activities physical or others, as described under Road Maintenance Standards in **Clause 6** of this Section.
- ii) Periodic Maintenance Works which include Periodic Renewal (Resurfacing) and Pavement Riding Quality Improvement Works (Overlay) including Profile Correction Course where required.
- iii) Flood Damage Repairs/Special Repairs to reinstate road sections damaged as a result of floods/unforeseen causes.
- iv) **Repair and Maintenance works related to Rigid Pavements:** - All repair and maintenance works related to Rigid Pavements shall be carried out following IRC:SP:83 (Guidelines for Maintenance, Repairs & Rehabilitation of Cement Concrete Pavements).

2.2 Routine Maintenance of Road Assets

2.2.1 The Contractor shall be responsible for maintaining all road assets under the Contract to the Road Maintenance Standards as described in **Clause 6** of this Section. The Contractor will monitor road condition and Service Levels for all roads included in the Contract and will be required to ensure that the Service Levels never fall below the prescribed thresholds. The type and volume of road maintenance works to be carried out to maintain the roads to the specified Road Maintenance Standards shall be as per approved program as per **Clause 17.1** of General Conditions of Contract.

2.2.2 The Contractor will quote fixed lump sum prices for carrying out routine maintenance of the road assets for the Contract Period. The agreed monthly payment for routine maintenance will be made to the Contractor on certification by the Engineer that the maintenance of road assets done under the Contract complies with the Road Maintenance Standards specified in the Contract.

2.2.3 If the defined Service level subject to the maximum permissible tolerances is not achieved in any given month, the payment for that month will be reduced in accordance with Clause 10 of this section (Part-I).

2.3 Periodic Renewal (PR)/Pavement Riding Quality Improvement (PRQI) Works:

2.3.1 The Contractor shall carry out PR/PRQI works for the road(s) specified in the Contract.

2.3.2 Treatment for PR shall be [30/40/50 mm BC conforming to Clause 506 of MORTH Specifications; this may vary from project to project, e.g. it may be PC + SC or 40 mm BC]. This shall be preceded by a Profile Correction Course of bituminous mix, for correction of camber to minimum 2 percent and for correction of super elevation at horizontal curves as per the IRC Standards, where required.

2.3.3 Treatment for PRQI Works shall be [50/75 mm DBM and 40 mm BC conforming to Clause 505 and Clause 506 of MORTH Specifications; this may vary from project to project , e.g. it may be 50/75 mm BM and 30/40/50 mm BC]. This shall be preceded by bituminous profile correction course for correction of camber to minimum 2 percent and for correction of super elevation at horizontal curves as per the IRC Standards, where required.

2.3.4 The Contractor will quote his unit rate for items of works under PR/PRQI as detailed in the BOQ excluding the profile correction course.

2.3.5 For Profile Correction course, the Contractor will quote unit prices for the items given in the BOQ. The Contractor will execute the work of profile correction course as per the quantities approved by the Engineer and will be paid separately on the basis of the quantities executed and unit rates included in the Bid.

2.3.6 The Contractor will carry out every year PR/PRQI Works in 30 to 40 percent length of the roads specified in the Contract. The Contractor will identify the stretches for PR/PRQI and finalize the yearly program in consultation with the Engineer. The stretches identified for PR/PRQI Works shall be continuous. No stretch shall be less than 10 lane km.*

2.4 Flood Damage Repairs (FDR)/Special Repairs (SR)

2.4.1 Flood Damage Repair (FDR) Works are the works required to reinstate the roads, drains, bridges, culverts, etc. damaged as a result of storms, rains and floods or natural calamities. The need and scope of FDR Works shall be jointly identified as a Technical Proposal by the Engineer and the contractor. For starting execution of FDR Works, the Engineer shall issue a Work Order after approval of the Technical Proposal by the Employer.

2.4.2 Special Repair (SR) Works are the works which may be required to be undertaken due to damage caused to roads or to structural components of bridges / culverts by major accidents, acts of vandalism (during bandhs / strikes etc.), earthquakes, etc. or any other works so categorised by the Employer. These works may require reconstruction/ repair of damaged sections. For starting execution of Special Repair Works, the Engineer shall issue a Work Order, after it has been approved by the Employer.

2.4.3 The Bill of Quantities will include provisional quantities for FDR/SR Works during the Contract Period. The Contractor will quote unit rates for the items given in the BOQ. The quantities given in the BOQ are provisional and subject to variation. The provision in the BOQ will be used only when there is a requirement.

2.4.4 In case of any damage occurred due to extraordinary rains/flooding/overtopping in the areas notified as flood affected areas because of any unforeseen natural phenomenon, traffic diversion adversely affecting the Service Level, the Contractor may make a formal request to the Engineer to carry out FDR/SR Works to remedy those damages. The request will be accompanied by a report giving details of damages photographs, etc. The request must be made immediately. In case of emergency the Contractor must inform the Engineer at once and the report may follow. The Engineer will evaluate the report and, as required, issue a work order to carry out FDR/SR Works. The order will specify the type of work, estimated quantities, cost and time allowed. The Contractor will execute the work as per the Work Order and will be paid separately on the basis of quantities executed and the unit price included in the Bid.

2.4.5 In case the nature of FDR/SR Works is similar to any activity covered under the routine maintenance, the payment for that activity under monthly lump-sum payment will not be admissible for those sections during the months in which FDR Works were carried out.

2.5 Reconstruction/rehabilitation works: If, Engineer is of the opinion that some stretches may require reconstruction or rehabilitation which can not be taken up under Routine Maintenance, Engineer may issue Work Order to the contractor to carry out such works in specific sections/stretches with prior approval of the Employer. Rates for the same shall be derived from similar items in the contract, failing which the same may be worked out based on the prevalent schedule of rates for the States.

3 Roads included in the Contract

The roads/road sections included in the Contract are given in the Contract Data.

4 Planning of Maintenance Activities and Road Condition

4.1 In accordance with Sub-Clause 9.3 of the General Conditions of Contract, the Contractor will establish a Planning Unit whose task is to plan and program maintenance activities and evaluate continuously the degree of compliance with the required Maintenance Standards. This Unit will undertake regular inspections and maintain an updated inventory of condition of roads under the Contract. The Unit will work in close coordination with the Engineer and his staff.

4.2 Not later than the date 14 days before the Date of Start, the Contractor and the Engineer will carry out a joint survey of the initial condition of roads included in the Contract and identify the maintenance works that have to be taken up by the Contractor immediately.

4.3 The Contractor will prepare monthly programs of maintenance in consultation with the Engineer and submit the same at least one week in advance of the coming month. For this purpose, the Engineer will undertake every month a joint inspection with the Contractor's unit to identify the work to be executed. Consequent to this, the Engineer shall communicate approval of the monthly maintenance program to the Contractor within 7 days.

The monthly program of maintenance will essentially give the following details:

- i) The condition of roads in the format acceptable to the Engineer.
- ii) The proposed maintenance works.
- iii) Organization and management of the program including deployment of various resources i.e. men, materials and equipment.

4.4 The Contractor will deploy a Mobile Maintenance Unit to attend to the maintenance needs in an efficient manner.

In addition to the daily and weekly inspections on regular basis, the Contractor will also carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system *60 days prior to likely onset of monsoons* every year as per the guidelines contained in IRC:SP:35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Engineer *45 days prior to likely onset of monsoons* every year. Engineer shall accord approval of the proposal within 7 days with or without modifications. The required repairs shall be completed *before onset of monsoons* every year. After monsoon, a summary inspection shall be carried out within *30 days after monsoon is over* and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Engineer.

5 Supervision and Quality Control

The Contractor will exercise proper supervision on the quality and workmanship of the work executed and will carry out the requisite quality control tests for testing of materials, mixes, workmanship and final product and will ensure strict compliance with the quality requirements and Specifications prescribed in this Section.

The Contractor shall establish field laboratories at appropriate places. The field laboratories will be adequately equipped with the required testing equipment and trained personnel for carrying out the quality control tests. The quality control laboratories shall be provided by the Contractor as incidental to work and no separate payment shall be made for this.

The Contractor shall maintain complete record of quality control tests in the prescribed formats as per IRC Handbook of Quality Control or as directed by the Engineer. The test results and records shall be made available to the Engineer whenever required.

The Engineer may require the Contractor to carry out certain tests in his presence or in association with his representative to check the quality of materials and work, and the Contractor shall make available the laboratory and required facilities for carrying out the tests. The cost of carrying out tests shall be borne by the Contractor.

6 ROAD MAINTENANCE STANDARDS

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 defective condition as per the permissible tolerances. The following Road Maintenance Standards shall be applied and complied with for all roads included in the Contract.

6.1 Main Carriageway (Pavement, Paved Shoulders and medians)

6.1.1 Rutting

Service Level Permissible Tolerance (Max. defective condition)	All rut depths should be rectified Rutting shall not exceed 20 mm; Maximum rutting is 2.5 percent in the sub-section Ex. [Say for length of sub-section of 200 m length, within any particular km between two corrective km as per chainage; maximum cumulative rutting = $0.025 \times 200 = 5 \text{ m}$]
Measurements and Detection	(i) The rutting should be measured in isolated locations
Maximum Response Time	Rutting beyond 2.5 percent should be measured in isolated locations.
Rectifications Standard	Rutting shall be repaired as per Sub-Clause 4.3 of Specification.

6.1.2 Skid Resistance

Service level	Stretches shall have minimum skid resistance of 40 SN
Permissible Tolerance (Max. defective condition)	Skid Resistance shall not be less than 35 SN
Measurements and Detection	Stretches having Skid Resistance less than 35 SN should be improved to have a Skid Resistance of 50 SN
Maximum Response Time Rectification Standard	Within 3 days of detection Resurfacing of the affected stretches

6.1.3 Potholes

Service Level	No potholes are allowed	
Permissible Tolerance (Max. Defective Condition)	Not more than 3 isolated potholes in one km between two consecutive chainage. Maximum size of any pothole not more than 300 sq cm in area x 4 cm depth	
Measurement and Detection	Visual inspection and with ruler	Area of pothole shall be measured by the area of rectangle enclosing the pothole
Maximum Response Time	i) ii)	Within 3 days after detection of the pothole Potholes causing safety hazard to be repaired within 24 hrs.
Rectification Standard	:	
	Potholes shall be repaired as per Sub-Clause 4.1 of Specifications.	

6.1.4 Cracking in Flexible Pavement

Service level	All cracks shall be sealed	
Permissible Tolerance (Max. defective condition)	Cracked area shall not exceed 10 percent of the area in any sub-section of 200 m length Ex. [Say area of sub-section of 200 m length = 7 x 200 = 1400 sqm. Area of cracking not to exceed 140 sqm in the sub-section.]	
Measurements and Detection	i) For isolated cracks more than 3 mm wide the cracked area will be measured as length of crack multiplied by 1 m width. ii) For multiple cracks, the area of the rectangle enclosing the cracked portion plus 0.3 m on all sides shall be the area of cracking.	
Maximum Response Time	i) Cracks less than 3 mm wide must be sealed within 14 days after their detection. ii) Cracks more than 3 mm wide must be sealed within 3 days after their detection	
Rectification Standard	i) Cracks less than 3 mm wide shall be repaired as per Sub-Clause 4.2 (i) of Specification. ii) Cracks more than 3 mm wide shall be repaired as per Sub-Clause 4.2 (ii) of Specification	

6.1.5 Cracks in Concrete Pavement

Service Level	All cracks above 0.2 mm width shall be sealed
Permissible Tolerance	Cracked area shall not exceed one percent of the area in any subsection 200 m length. e.g. [Say area of sub-section of 200 m length = $7 \times 200 = 1400$ sq m Area of cracking not to exceed 14 sq m.]
Measurement Detection	i) For isolated cracks more than 3 mm wide, the cracked area will and be measured as length of crack multiplied by 1 m width. ii) For multiple cracks the area of the rectangle enclosing the cracked portion plus 0.3 m on all sides shall be the area of cracking.
Maximum Response Time	i) Cracks between 0.2 mm to 0.5 mm shall be sealed within one month of their detection. ii) Cracks between 0.5 mm to 3.0 mm shall be sealed within 14 days of their detection cracks. iii) Cracks more than 3.0 mm shall be sealed within 7 days of their detection cracks.
Rectification Standard	As per IRC:SP:83 Table 4.5.

6.1.6 Spalls in Concrete Pavement

Service Level	All spalls above 10 mm to be repaired
Permissible Tolerance	i) Spalling exceeding 10 mm in width and more than 10 mm deep, 15 percent of aggregate length along a) Transverse joint in a panel b) along longitudinal joint in a panel.
Measurement and Detection	Measure with ruler and measuring tape.
Maximum Response Time	Spalls of width less than 20 mm shall be repaired within 56 days of their detection. Spalls of width above 20 mm shall be repaired within 28 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5 item No. 12

6.1.7. *Joint Seal defects*

Service Level	All joints shall be maintained in serviceable condition
Permissible Tolerance	Less than 25 percent of the joint length in a panel and no allowance for water ingress and trapping of incompressible.
Measurement and Detection	Measure with measuring tape
Maximum Response Time	Within 28 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5

6.1.8 *Corner Break*

Service Level	No corner break to be allowed
Permissible Tolerance	Maximum 0.2 mm and one corner break.
Measurement and Detection	By visual inspection and ruler
Maximum Response Time	Within 28 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5.

6.1.9 *Ravelling/Honeycombed type surface and Scaling*

Service Level	Minimum Raveling/Honeycombed type surface and Scaling to be allowed
Permissible Tolerance	Not more than 2 percent of total surface area of slab and depth of damage not more than 5 mm.
Measurement and Detection	By visual inspection
Maximum Response Time	Within 56 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5 item No. 7 and 8

6.1.10 Polished Surface/Glazing

Service Level	Textured depth more than 1 mm for brushed texturing and 1.5mm for tining. [British Pendulum Number (BPN) rating more than 45]
Permissible Tolerance	Average texture depth not less than 0.3 mm for texturing and not less than 1.5 mm for tining.
Measurement and Detection	Sand patch method in case of brush texturing and Vernier Calliper method in case of Tining.
Maximum Response Time	Within 6 months of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5 item No. 9

6.1.11 Pop-out (small hole) and potholes

Service Level	Popout less than 50 mm depth acceptable upto and not more than 3 numbers in panel may exist and no pothole is allowed.
Permissible Tolerance	i) Pop-out - Diameter less than 50 mm, Depth less than 25 mm and not more than 1 no. per 5 m ² of surface area of slab. ii) Pothole – No pothole is permissible
Measurement and Detection	By visual counting and ruler
Maximum Response Time	Pop-out: - within 28 days of their detection. Potholes: - immediately within 3 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5 Item No. 10

6.1.12 Punch-out (applicable to CRCP only)

Service Level	No punch out allowed
Permissible Tolerance	Width less than 0.5 mm and length less than 3.0 m per m ² of surface area of panel.
Measurement and Detection	By measuring tape.
Maximum Response Time	Immediately i.e. within 3 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5 Item No. 6

6.1.13 Faulting in cracks or joints

Service Level	Faulting less than 3mm may exist
Permissible Tolerance	Difference of level between two surfaces of slab across a joint or across the crack/slab shall be not more than 6 mm.
Measurement and Detection	By ruler
Maximum Response Time	Within 8 weeks of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.13

6.1.14 Heave and Bump

Service Level	Not to exceed 5 mm
Permissible Tolerance	vertical displacement not more than 5 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Within 12 weeks of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.16 and 17

6.1.15 Blow-up or Buckling

Service Level	Not allowed
Permissible Tolerance	vertical displacement not more than 10 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Immediately i.e. within 3 days of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.14

6.1.16 Depression

Service Level	Not more than 5 mm
Permissible Tolerance	Negative vertical displacement not more than 10 mm.
Measurement and Detection	By ruler and straight edge.
Maximum Response Time	Within 4 weeks of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.15

6.1.17 Drop-off

Service Level	Less than 3 mm
Permissible Tolerance	Difference of level not more than 25 mm in 200 m aggregate length in 1.0 km.
Measurement and Detection	By ruler, measuring tape and straight edge.
Maximum Response Time	Within 12 weeks of their detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.18

6.1.18 Pumping

Service Level	Not allowed
Permissible Tolerance	No tolerance allowed.
Measurement and Detection	By visual inspection.
Maximum Response Time	Immediately on detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No.19

6.1.19 Ponding

Service Level	Up to 2 number panels
Permissible Tolerance	No tolerance allowed.
Measurement and Detection	By visual inspection.
Maximum Response Time	Immediately on detection.
Rectification Standard	As per IRC:SP:83 Table 4.5. Item No. 20

6.1.20 *Medians*

Service Level	<ul style="list-style-type: none"> i) Medians must always be clean, free of debris and objects posing danger to traffic safety. ii) The level of filling in the median should be maintained such that no fill material spills on to the carriageway. iii) Median plantations shall be maintained properly with watering and pruning as required from time to time. There shall be no obstruction in sight distance. No fallen plantations on roadway are allowed.
Permissible Tolerance	<ul style="list-style-type: none"> i) Zero tolerance in respect of objects posing danger to traffic safety. ii) Height of plantations not to exceed 1 m at any point of time. iii) No spillage of earth fill from median to carriageway
Measurement and Detection	Visual Inspection and measuring tape.
Maximum Response Time	Maintenance – regularly Pruning of shrubs - 14 days

6.1.21 *Litter, debris, dead animals*

Service Level	i) Carriageway, shoulders, medians, footpaths, service roads, lay-byes, bridge decks must always be clean and free of objects posing danger to traffic safety including dead animals, oil spillages from vehicles. ii) Any animal carcass or debris will not be allowed within the road land.
Permissible Tolerance	i) Zero tolerance in respect of objects posing danger to traffic safety. ii) Not more than 5 percent length below the defined service level in case of no danger to traffic safety.
Measurement and Detection	Visual Inspection.
Maximum Response Time	i) All litter, debris, dead animals and any other obstructions in traffic from the areas specified under Service Level (i) must be removed within 12 hours. ii) Other within 3 days
Rectification Standard	As per Sub Clause 4.19 of Specifications.

6.2 **Granular Shoulder (Hard Shoulders Without Bituminous Surfacing)**

Service Level	Granular shoulders shall be maintained to the requisite cross fall (2.5 percent) and shape. The level of shoulder should match the pavement edge. There shall be no undulations, potholes, loose surface, rutting, obstructions or vegetation, which may lead to water ponding or pose danger to traffic safety
Permissible Tolerance	i) Crossfall not less than the camber on the paved surface or not more than 4 percent in 100 m length in one km. ii) Not more than 5 isolated potholes (total number of potholes on both side shoulders) in one km. Maximum size of any pothole not more than 300 sq. cm. x 4 cm. depth iii) Rutting — Maximum upto 40mm in an aggregate length of 100 m in one km iv) Edge drop — Maximum 50 mm in 200 m length in one km. v) Except traffic sign posts (where permitted) no other objects/obstructions are allowed.
Measurement and Detection	Visual Inspection and measurement using camber board and straight edge
Maximum Response Time	i) Within 14 days ii) Water ponding, if any, to be attended to and made safe within 48 hours.
Rectification Standard	As per Sub-Clause 4.7 of Specifications.

6.3 Earthen Shoulders

Service Level	Earthen shoulders shall be maintained to the requisite cross fall (1 percent more than the camber on the paved surface) and shape. The level of shoulder should match the pavement edge. There shall be no undulations, settlements, uncompacted surface, obstructions or vegetation (except permitted grass cover), which may lead to water ponding or pose danger to traffic safety
Permissible Tolerance	<ul style="list-style-type: none"> i) Crossfall not less than 2.5 percent or greater than 5 percent in 100 m length in one km. ii) Edge drop — Maximum 50 mm in 200 m length in one km. iii) Except traffic sign posts (where permitted) no other objects/obstructions are allowed. iv) Height of grass cover not to exceed 100 mm.
Measurement and Detection	Visual Inspection and measurement using camber board of 3 m straight edge
Maximum Response Time	<ul style="list-style-type: none"> i) Within 14 days ii) Water ponding, if any, to be attended to within 3 days.
Rectification Standard	As per Sub Clause 4.8 of Specifications.

6.4 Road Embankment

Service Level	Road embankment shall be maintained to standard width and side slopes including kerb drains, chute drains and pitching, where provided.
Permissible Tolerance	<ul style="list-style-type: none"> i) Not more than 100 m length in one km will fall below the defined Service Level ii) Damaged pitching not more than 10 percent area in 100 m length.
Measurement and Detection	Visual inspection, measured with 3 m straight edge and measuring tape.
Maximum Response Time	<ul style="list-style-type: none"> i) Rain cuts, erosion of berms, side slopes must be repaired within 7 days after detection. Caution boards, signs, barricading shall be installed within 8 hours of detection in case of any danger to traffic safety. ii) Any damage to the pitching, drains must be repaired within 14 days after detection
Rectification Standard	Repairs of rain cuts as per Sub-Clause 4.9 of Specifications. Restoration of damaged pitching as per Clause 2504 of MORTH Specifications.

6.5 Culverts and Causeways

Service Level	All culverts/causeways shall be free of any obstructions and shall be maintained in proper condition to ensure (i) proper functioning and safety of structure, and (ii) safety and comfort of users.
Permissible Tolerance	i) Not more than 10 percent restriction in waterway during dry season. ii) Damaged flooring, apron, pitching not more than 10 percent of the area. iii) Scouring not more than 500 mm depth. iv) Kerbs, parapets, guide posts/stones, as per Clause 6.11 of this Section.
Measurement	Visual, measuring tape
Maximum Response Time	i) Clearing, before rains, the waterway of obstructions, silting, island formation, and vegetation — Within 28 days, as and when required, after detection. ii) Filling of scour around foundations, head walls, wing walls — Immediately during rains. Otherwise within 14 days. iii) Repairs of damaged flooring, pitching, apron, parapets, plaster guide posts/stones – within 14 days. iv) Painting of kerbs, parapet and guide posts — once a year.
Rectification Standard	As per Sub-Clause 4.11 and 4.15 of Specifications.

6.6 Bridges

Service Level	All bridges shall be free of any obstacles in the waterway, and shall be maintained in proper condition to ensure: i) Proper functioning of all components and safety of the structure ii) Safety and comfort of road users
Permissible Tolerance	i) Max 10 percent restriction in waterway during dry season ii) Damaged flooring, aprons: Not more than 10 percent of area in a span iii) Damaged pitching: Not more than 10 percent area in 100 m length iv) kerbs, parapets, railings-as per Clause 6.11 of this Section. v) Defects should not pose any danger to safety of road users and structures
Measurement and Detection	Visual inspection and measuring tape

Response Time	<ul style="list-style-type: none"> i) Clearing and removal of dirt, silt and vegetation from Pier Caps, Bearings, Expansion Joints, Superstructure, Kerb channel, Drainage spouts, Retaining walls — within 14 days. ii) Clearing the waterway of obstructions, island formation, vegetation — Before rains. Within 28 days, as and when required. iii) Repairs to damaged flooring, aprons and pitching <ul style="list-style-type: none"> a) Within 14 days b) Flooring, aprons, pitching shall be thoroughly checked before the rainy season and the damaged portion if any, shall be reinstated to the original specifications iv) Repairs to damaged footpaths, Wearing course <ul style="list-style-type: none"> a) Arrangements for traffic safety shall be made immediately, within 6 hours. b) Repairs must be carried out within 24 hours, if there is danger to traffic safety c) In other cases — within 14 days v) Repairs to damaged kerbs, railings, parapets — as per Clause 6.11 of this Section. (vi) Greasing of metallic Bearing — Once a year vii) Any structural distress in any component of the structure shall be reported to the Engineer immediately, as soon as noticed and necessary barricading and signing shall be fixed for traffic safety.
Rectification Standard	As per Sub-Clause 4.12 and 4.15 of Specifications.

6.7 Drains

Service Level	All drains shall be clean, without any obstruction and maintained to normal cross-section. Lining, where provided, shall be maintained without any damage.
Permissible Tolerance	Not more than 5 percent length below the defined Service Level
Measurement and Detection	Visual and measured with straight edge and measuring tape.
Maximum Response Time	<ul style="list-style-type: none"> i) Cleaning of drains in Urban areas — Every 2 weeks (14 days) or earlier in case of obstructions to flow. ii) Cleaning and repairs of road side drains— Before and after rains. iii) Repairing of any damaged section — Within 14 days after detection.
Rectification Standard	As per Sub-Clause 4.10 of Specifications.

6.8 Road Signs

Informatory Signs, Warning Signs and Mandatory Signs

Service Level	All signs shall be properly maintained and protected. It shall be ensured that: <ul style="list-style-type: none"> i) They are in place and properly installed ii) They are cleaned (with detergents) at least twice in a year and if situation demands again as per requirement. iii) They are clearly legible and free from any damage or pastings.
Permissible Tolerance	Not more than 5 percent below the defined Service Level
Measurement and Detection	Visual Inspection
Maximum Response Time	7 days
Rectification Standard	As per Sub-Clause 4.13 of Specifications

6.9 Road Delineators

Service Level	All delineators are to be clean and maintained in proper condition without any damaged or missing ones.
Permissible Tolerance	Not more than 5 percent below the defined Service Level.
Measurement and Detection	Visual Inspection
Maximum Response Time	Within 7 days after detection
Rectification Standard	As per Sub-Clause 4.13 of Specifications

6.10 Kilometre Stones, 200 m Stones, 5th Kilometre Stones

Service Level	All km, 200 m and 5 th km stones shall be in place, clearly legible and free from defects and damage.
Permissible Tolerance	Not more than 5 percent below the defined Service Level.
Measurement and Detection	Visual Inspection.
Maximum Response Time	Within 14 days after detection.Kilometer Stones, 200 m Stones and 5 th km Stones shall be painted once every year.
Rectification Standard	As per Sub-Clause 4.14 of Specifications.

6.11 Kerbs, Parapets, Railings, Guide Posts/Stones

Service Level	All kerbs, parapets, railings, guide post/stones shall be clean, painted and maintained in proper condition without any damaged or missing units.
Permissible Tolerance	Not more than 5 percent below the defined Service Level. No missing parapet/railing shall be allowed without proper safety arrangements pending restoration/repairs.
Measurement and Detection	By visual inspection and measuring tape.
Maximum Response Time	<ul style="list-style-type: none"> i) Damaged parapets/railings posing danger to traffic shall be made safe within 12 hours. ii) Other repairs/replacement within 7 days after detection iii) Kerbs, parapets, railings, guide post/stones shall be painted once every year.
Rectification Standard	As per Sub-Clause 4.15 of Specifications.

6.12 Steel Railings/Metal Beam Crash Barriers/Concrete Crash Barriers

Service Level	Railings/Crash Barriers shall be maintained to the original lines and levels, kept clean, free of any pastings, and well painted.
Permissible Tolerance	No missing Railings/Crash Barriers shall be allowed without proper signs, and safety arrangements pending repairs/replacement of the damaged portion.
Measurement and Detection	Visual inspection and 3 m straight edge
Maximum Response Time	<ul style="list-style-type: none"> i) Repairs/Replacement within 48 hours after detection ii) In case the damaged railings/crash barriers pose danger to traffic safety, immediate measures (within 12 hours) shall be taken to make them safe iii) All railings and Crash barriers shall be painted once every year.
Rectification Standard	As per Sub-Clause 4.16 of Specifications.

6.13 Pavement Markings

Service Level	All pavements markings shall be clearly visible and reflective.
Permissible Tolerance	Not more than total 100 m in one km.
Measurement and Detection	Visual inspection and measuring tape
Maximum Response Time	14 days
Rectification Standard	As per Sub-Clause 4.17 of Specifications.

6.14 Clearing of Vegetation

Service Level	No vegetation growth (other than the normal grass cover/turfing, plantation done for beautification and trees) is permitted in the road land. There should be no obstruction in the sight distance.
Permissible Tolerance	Height of grass not more than 100 mm
Measurement and Detection	Visual
Maximum Response Time	All unwanted vegetation, brushes, weeds shall be cleared within 14 days
Rectification Standard	As per Sub-Clause 4.18 of Specifications.

6.15 Trimming/Pruning/Maintenance/Removal of Trees

Service Level	All road side trees and plantations shall be maintained properly. There shall be no obstruction in sight distance and vertical clearance by the road side trees. No fallen trees on roadway are allowed.
Permissible Tolerance	Minimum sight distance of 240 m and vertical clearance of 5 m.
Measurement and Detection	Visual inspection and measuring tape.
Maximum Response Time	Maintenance – regularly Trimming of trees — 14 days Removal of dead trees with the approval of forest department — 14 days. Fallen trees shall be cleared from the roadway within 4 hrs and further action shall be taken for their disposal under the supervision of Forest Department. In case of any blockade of carriageway or danger to traffic safety, caution boards, signs, barricades, shall be installed. Further, if diversion of traffic is required, road users shall be informed through advance signs, and radio messages about the diversion of traffic and the alternative route to be taken.

6.16 Attendance at Accidents, Emergency Situations

Service Level	In the event of any accident or emergency situation leading to traffic disruptions, etc., the Contractor shall take immediate action to: i) Inform Police and other agencies ii) Provide assistance for the first aid and for transport of accident victims to the nearest hospital under the direction of Police iii) Make arrangements for safe movement of traffic iv) Remove damaged vehicles involved in the accidents under the direction of the Police v) Clear the site after getting clearance from the police
Permissible Tolerance	No tolerance is allowed
Measurement and Detection	Noticed by Contractor's Staff, or Reported by PWD Staff, or Reported/Informed on telephone by any road user
Maximum Response Time	For (i) to (iii) under Service Level — within one hour after detection For (iv) & (v) under Service Level — within 6 hours after detection In case of any blockade of carriageway or danger to traffic safety, caution installed. Further, if diversion of traffic is required, road users shall be informed through advance signs and radio messages about the diversion of traffic and the alternative route to be taken.

7 Grace Period

In order to allow for the Contractor's initial mobilization, the first two months of the Contract Period will be treated as grace period in which 70 percent compliance in the first month and 85 percent compliance in the second month with the Road Maintenance Standards will be acceptable without any reduction in payment. In case the degree of compliance falls below these limits in the grace period, reduction in monthly payment will be effected. From the third month onwards, the Contractor shall achieve 100 percent compliance with the Road Maintenance Standards for claiming full monthly payment.

8 Road Roughness for PR and PRQI Works

The Contractor will ensure the following threshold values.

	Pavement Surface	Maximum Roughness
1)	For new surface constructed as part of Periodic Renewal (Flexible pavement)	2000 mm/km
2)	For new surface constructed as part of Pavement Riding Quality Improvement Work (Flexible pavement)	2000 mm/km
3)	Rigid pavement	2500 mm/km

The roughness will be measured by calibrated Bump Integrator as per the procedure given in IRC:SP-16

9 Method of Inspection to Verify Compliance with Road Maintenance Standards

9.1 Formal Inspection of Compliance with Maintenance Standards

The main purpose of the formal inspection is to enable the Engineer to verify and certify the monthly statement presented by the Contractor. Formal inspection shall be scheduled in advance and shall be done within 7 days after presentation by the Contractor of the monthly statement to the Engineer. The Engineer shall inform the Contractor of his intention to carry out the inspection at least 48 hours in advance. The Contractor's Planning Unit will assist the Engineer in verifying compliance with Maintenance Standards. Arrangements for the inspection will be made by the Contractor. Based on the formal inspection, the Engineer will prepare a brief note within 5 days of inspection, describing:

- a) Date, road inspected, persons present.
- b) Any non-compliance observed, indicating item of work and specific particulars explaining non-compliance
- c) Time granted by the Engineer to the Contractor to remedy the defects.

The Engineer will correct any errors in the monthly statement, effect deductions for any non-compliance observed, and certify for payment. Formal inspections will also be scheduled for the follow up site visits to verify if the Contractor has remedied the earlier non-compliance.

9.2 Normal Inspections

The Engineer may carry out inspections at any time. If he observes any road sections where Maintenance Standards are not met, he will inform the Contractor, in writing, to take remedial actions needed. Any non-compliance beyond the permissible tolerance levels shall attract Clause 10 below for reduction in payment to the Contractor.

10 Payment Reductions for Non Compliance

- i) In accordance with the Sub-Clause 33.6.1 of the General Conditions of Contract, Payment Reductions shall be applied in case of non-compliance with the Road Maintenance Standards. Any deduction made on account of non-compliance will not be paid even after establishing the compliance subsequently. The deductions will continue to be made every month until compliance is done.
- ii) For each case of non-compliance of Maintenance Standards observed on the basis of formal inspection of the road, the Engineer will calculate the amount of payment reduction on the basis of weightage in percentage of the Total Routine Maintenance Cost assigned to the non-conforming item.
- iii) The following weightages shall govern the payment reduction:

Sl. No.	Item	Percentage
1)	Carriageway/Pavement <ul style="list-style-type: none"> i) Potholes Repair ii) Crack Sealing iii) Repairs of Edges, Rutting iv) Dig outs, Minor surface defects 	20% 7.5% 7.5% 5%
2)	Shoulders, Embankment, Slopes <ul style="list-style-type: none"> i) Edge drop, inadequate crossfall, undulations, settlement, potholes, ponding, obstructions ii) Deficient slopes raincuts, disturbed pitching, vegetation growth, pruning of trees 	10% 7.5%
3)	CD Works (Culverts, Bridges, Causeways) <ul style="list-style-type: none"> i) Desilting, cleaning vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths ii) Painting, repairs/replacement of kebs, railings, parapets, guide posts/stones, crash barriers 	10% 5%

4)	Roadside Drains	
	i) Cleaning and repair of drains	5%
5)	Road Furniture	
	i) Cleaning, repair/replacement of road signs, delineators, road markings	7.5%
	ii) Painting, lettering, replacement of 5 th km Stones, 200 m Stones	5%
6)	Miscellaneous Items	
	i) Removal of dead animals, broken down/accidented vehicles, fallen trees, road blockades	5%
	ii) Any other defects as per sub-clauses 6.1 to 6.16, but not listed above	5%

- (iv) The amount to be deducted from monthly lump-sum payment shall be calculated as under:

Amount to be deducted (₹) = P/100 X M XL1/L

where,

P= Percentage of particular item for deduction

M=Monthly lump-sum payment as per the Bid

L1= Non-complying length

L = Total length of the road

PART II

SPECIFICATIONS FOR ROAD MAINTENANCE WORKS

1 General

1.1 All materials, works and construction operations shall conform to the requirements laid down in the "Specifications for Road and Bridge Works", Ministry of Road Transport and Highways, Published by Indian Roads Congress (IRC), New Delhi, IRC:82 "Code of Practice for Maintenance of Bituminous Surfaces on Highways" and IRC:SP:83 "Guidelines for Mainataince, Repairs and Rehabilitation of Cement Concrete Pavements" wherever applicable. Where the Specification for a work is not given, sound engineering practice shall be adopted to the satisfaction of the Engineer.

"Specifications for Road and Bridge Works, Ministry of Road Transport and Highways" is hereinafter referred to as MORTH Specifications

2 Arrangements for Traffic during Construction

2.1 The Contractor shall take all necessary measures and make arrangements for the safety during construction in accordance with the requirements of Clause 112 of MORTH Specifications. He shall provide, erect and maintain all such barricades, signs, markings, flags, lights as required or directed by the Engineer for safety of traffic passing through the section under repairs/improvement.

2.2 All maintenance works on the road shall be carried out in a manner which would cause least interference to the traffic. In stretches where resurfacing or riding quality improvement works are to be taken up, the Contractor during execution of work shall provide and maintain proper passage for traffic. Where it is not possible or safe to allow traffic on part width of the carriageway, a temporary diversion of proper specifications shall be constructed by the Contractor at his cost. The Contractor shall take prior approval of the Engineer regarding traffic arrangements during construction.

2.3 All arrangements for traffic during construction shall be considered as incidental to the work and shall be Contractor's responsibility. The Engineer shall determined the penalty to be imposed on the Contractor for deficiency in compliance to the requirement.

3 Quality Control

3.1 Quality control on materials and workmanship is the primary responsibility of the Contractor. Quality control shall be exercised in accordance with the Quality Plan approved by the Engineer. The Engineer may, during and after construction test the quality of materials and work in order to verify conformance with the prescribed Specifications.

4 Rectification Standards for Routine Maintenance

Before any work is started, signs, barriers, etc. shall be placed and necessary arrangements made for ensuring safety of traffic and workers in the work zone, as described in **Clause 2** of this Section

Preparation of the surface prior to application of any treatment, shall be carried out in accordance with the relevant Clauses of MORTH Specifications.

After completion of the work, the site shall be left cleaned and tidy. No stockpiles of material shall be left on the road.

4.1 Repair of Potholes

Repair of potholes shall be carried out in accordance with Clause 3004.2 of MORTH Specifications. Non-bituminous material shall not be used for repair of potholes.

4.2 Sealing/filling of Cracks

- i) For cracks less than 3 mm wide in Flexible pavements, rectification is to be done by cleaning and application of Fog Spray as per MORTH Specifications for Road and Bridge Works **Clause 515**.
- ii) For cracks more than 3 mm wide in Flexible pavements, rectification is to be done by cleaning and application of Slurry Seal as per MORTH Specifications for Road and Bridge Works **Clause 513**.
- iii) For cracks in Rigid pavements, rectification is to be done as per IRC:SP:83.

4.3 Rutting

The rectification treatment shall consist of leveling/patching longitudinal depression with premix open-graded or dense-graded patching material depending upon the original surfacing specification and compacting to the desired level. If there are any cracks in the surface, they shall be sealed as per **Sub-Clause 4.2** of this Section, before filling/patching the ruts.

The boundary of the area to be leveled shall be marked.

Premix patching shall be done as per **Sub-Clause 5.6** — Premix Open-graded Patching or **Sub-Clause 5.7** — Premix Dense-graded Patching of IRC:82.

Camber and surface regularity shall be checked for compliance.

However, in case the rutting is of serious nature, which in the opinion of the Engineer may require reconstruction or rehabilitation which can not be taken up under Routine Maintenance, Engineer may issue Work Order to the contractor to carry out such works in specific sections/stretches with prior approval of the Employer. Rates for the same shall be derived from similar items in the contract, failing which the same may be worked out based on the prevalent schedule of rates for the States.

4.4 Pavement Edge Breaking

The shoulder and the pavement material in the affected area shall be removed to a regular section with vertical sides.

The pavement and shoulder shall be built simultaneously to the same specifications as the original construction while ensuring thorough compaction.

The materials and construction procedure shall conform to the requirements of relevant Clauses in MORTH Specifications. The shoulder shall have the requisite cross fall.

4.5 Edge Drop

The shoulder shall be raised using material of the same quality or better quality than the original construction and thoroughly compacted by roller in the required cross fall.

The construction operation for raising of earthen or granular shoulder shall include scarifying/loosening the existing shoulder material in the entire shoulder width, adding fresh material, adding water where required to bring the material to appropriate moisture for compaction, mixing and rolling. The compacted thickness of a layer shall not exceed 150 mm.

The inner edge of the shoulder shall be at the same level as the pavement edge.

4.6 Surface Defects

Fatty surface (Bleeding) shall be treated as per Sub-Clause 4.2.2 of IRC:82. The method involving burning of the excess binder shall not be used.

Smooth surface (Slippery surface having very low skid resistance) shall be treated as per Sub-Clause 4.2.3 of IRC:82.

4.7 Granular Shoulders

- a) Edge drop shall be treated as per Sub-Clause 4.5 of this Section.
- b) Repair of Potholes/Depressions/Ruts

The quality of material for repairs shall conform to the MORTH

Specifications and shall be of similar type as the original shoulder construction. Both large and small areas are to be repaired in the same way.

Loose material and standing water shall be brushed from the area to be repaired.

Potholes shall be cut to vertical sides and deepened to reach sound material.

If the area to be repaired is dry, sprinkle water on it.

Mix the patch material with water.

Fill the patch with the granular mix in layers of about 75 mm at a time. Each layer shall be compacted with hand rammers or with small vibratory compactors. The patch shall be compacted to the correct shape.

c) Loss of Material

Fresh granular mix shall be laid in layers and correct crossfall and compacted with roller. Thickness of each compacted layer shall not exceed 100 mm. The work shall be carried out in accordance with the relevant MORTH Specifications.

4.8 Earthen Shoulders

- i) Making up the irregularities/loss of camber/loss of material by adding approved soil and compacting. The work shall be carried out in accordance with Clause 3003 of MORTH Specifications.
- ii) Stripping soil from the shoulder surface to achieve the required crossfall and level. The work shall be carried out in accordance with Clause 3003 of MORTH Specifications.

4.9 Restoration of Rain cuts

Restoration of rain cuts in the embankment and shoulders shall be carried out in accordance with Clause 3002 of MORTH Specifications.

4.10 Roadside Drains

4.10.1 *Cleaning and repairing roadside lined drains*

The sediments, debris, vegetation growth shall be removed/excavated and disposed of as directed by Engineer with all leads and lifts.

The drain slope and sides shall be dressed to the original flow line and cross section.

The damaged masonry/plaster/pointing/flooring shall be restored to match the original work.

4.10.2 Cleaning and reshaping of roadside unlined drains

The drains shall be cleaned of the deposition of sediments, debris or vegetation growth blocking the drain.

In case any erosion due to inadequate capacity of drain is noticed, the drain shall be deepened/widened in proper slope.

The drain slope and sides shall be dressed to required flow line and cross section.

The excess excavated material shall be disposed of with all leads and lifts, as directed by the Engineer.

4.11 Culverts and Causeways

Pipe openings/slab spans shall be checked and cleaned of all silt, debris and vegetation growth blocking the waterway.

Scoured areas shall be filled with suitable material and well compacted.

Damaged aprons/pitching/flooring shall be restored to original Specifications, as per Section 2500 of MORTH Specifications.

Damaged wearing course shall be restored to original Specifications.

Damaged kerbs, parapets, guide posts, shall be restored to original Specifications

Kerbs, parapets, stones shall be painted once every year.

4.12 Bridges

All bridge components/openings/spans shall be checked and cleaned of all silt, debris and vegetation growth.

Scoured areas shall be filled with suitable material and well compacted.

Damaged aprons/pitching/flooring shall be restored to original specifications, as per Section 2500 of MORTH Specifications.

Damaged footpaths, wearing course shall be restored to original specifications.

Bearings shall be checked at least once a year and greasing of metallic bearings shall be done.

Kerbs and railings shall be painted once every year.

4.13 Road Signs and Delineators

The road signs and delineators shall be thoroughly washed using detergent solution followed by a lean rinse and drying.

Defects in supporting structures like holes, surface marks or bent posts shall be repaired.

Delineators shall be as per original specification and reset to original condition.

All components of signs and supports, other than the reflective portion and G.I. posts shall be thoroughly descaled, cleaned, primed and painted with two coats of epoxy paint.

New signs/delineators in lieu of badly damaged/missing ones shall be provided conforming to MORTH Specifications (Clause 801/Clause 806) to perform the function and convey message that was originally required or as directed by the Engineer. Signs shall be retro-reflectORIZED and made of high intensity grade with encapsulated lens type reflective sheeting.

4.14 Kilometre Stones, 200 m Stones, 5th Kilometre Stones

Requirements of IRC:8 (Type Designs for Highway Kilometre Stones) and IRC:26 (Type Design for 200 m Stones) shall be met.

No Stone shall be missing, damaged or posing hazard to traffic.

All Stones shall be cleaned, undamaged and painted.

All Stones shall be painted at least once every year.

4.15 Kerbs, Parapets, Guide Posts/ Stones

Damaged kerbs, parapets, railings, guide posts/stones shall be restored to original specifications and shall be painted at least once every year.

4.16 Steel Railings, Metal Beam Crash Barriers, Concrete Crash Barriers

All damaged/missing units shall be restored/replaced to original condition. Requirements of Clause 809 for steel railings, Clause 810 for Metal beam crash barriers, and Concrete crash barriers, given in the MORTH Specifications, shall be met.

The railings and barriers shall be painted at least once every year, excluding galvanized sections.

4.17 Pavement Markings

Requirements of IRC:35 (Code of Practice for Road Markings shall be met).

Markings shall be cleaned.

Wornout/defective markings shall be repainted with thermoplastic/reflectorised paint.

4.18 Clearing of Vegetation

Slashing and removal of unwanted vegetation from the road land shall be done periodically. Height of grass shall not exceed 100 mm.

4.19 Litter and Dead Animals

All litter and dead animals shall be removed and disposed of, as directed by the Engineer. The pavement surface shall be kept cleaned and free of any objects causing hazard to traffic.

4.20 Repair and Maintenance works related to Rigid Pavements

All repair and maintenance works related to Rigid Pavements shall be carried out following IRC:SP:83 (Guidelines for Maintenance, Repairs & Rehabilitation of Cement Concrete Pavements).

5. Periodic Renewal/Pavement Riding Quality Improvement

The existing bituminous surface shall be prepared in accordance with Clause 501 of MORTH Specifications before laying the treatment for renewal/pavement riding quality improvement. The work of preparation of existing surface shall include cleaning of the surface, patching potholes, filling up of ruts/depressions, and sealing of cracks, etc.

Profile corrective course shall be provided to correct camber and superelevation where it has been approved by the Engineer by issuing a Work Order.

The Periodic Renewal/Pavement Riding Quality Improvement Work shall be carried out in accordance with the relevant MORTH Specifications.

6. Flood Damage Repair/Special Repair Works

The work shall be carried out in accordance with the MORTH Specifications/Rectification Standards as applicable.

(SECTION-6)

DRAWINGS,

SCHEDULE OF DRAWINGS

Contract No.: [_____]

Sheet Number	Drawing Number	Description
GENERAL DRAWINGS		
	1	Locality Plan
	2	Standard Cross Sections
	3	Latest as Built Drawings

(SECTION-7)

**BILL OF QUANTITIES/
WORK SCHEDULES**

**Summary of Bills of Quantities for Operation and Maintenance of
[Section from ____] to [Section to ____] (km ____ to km ____) of [NH/SH No.]**

Bill No.	Description	Amount (Rupees)	
		In Figures	In Words
A	BOQ for Routine Maintenance Works and Services		
B	BOQ for Periodical Renewal (PR)/Pavement Riding Quality Improvement Works (PRQI)		
C	BOQ for Flood Damage Repair (FDR) works and Special Repair (SR) works		
D	BOQ for Day Works		
	Total		

Bill No. A (Section-7)
BOQ for Routine Maintenance and Services on
[Section from ____] to [Section to ____] (km ____ to km ____) of [NH/SH No.]

Sl. No.	Item Description	Unit	Quantity	Unit Rate (₹)		Amount (₹)
				In Figures	In Words	
Asset Category: Pavement Main Carriageway and shoulder						
1	Routine Maintenance and Services for the entire Road length included in Contract	Lumpsum per month	[Contract duration in months]			
TOTAL FOR BILL NO. A						

Bill No. B (Section-7)
BOQ for Periodical Renewal (PR)/Pavement Riding Quality Improvement (PRQI) works on
[Section from ____] to [Section to ____] (km ____ to km ____) of [NH/SH No.]

Sl. No.	Item Description	Unit	Quantity	Unit Rate (₹)		Amount (₹)
				In Figures	In Words	
1)	Prime Coat – Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying primer at the rate of 0.60 kg/sqm using mechanical means as per MoRTH Specification Clause No. 502.	sqm				
2)	Tack Coat – Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom as per MoRTH Specification Clause No. 503.	sqm				
3)	Bituminous Macadam – Providing and laying bituminous macadam of Grading [1 or 2 as required for the specific contract] using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with paver finisher to the required grade level and alignment and rolled as per Clauses 501.6 and 501.7 to achieve the desired compaction.	cum				

4)	Dense Bituminous Macadam – Providing and laying dense graded bituminous macadam Grading [1 or 2 as required for the specific contract] using crushed aggregates of specified grading, premixed with bituminous binder as per design mix approved by the Engineer, transporting the hot mix to work site, sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 505 complete in all respects.	cum
5)	Bituminous Concrete – Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder as per design mix approved by the Engineer, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 506 complete in all respects.	cum

6)	Surface Dressing – Providing and laying surface dressing as wearing course in two coats using crushed stone aggregates of specified size on a layer of bituminous binder laid on prepared surface and rolling with 8-10 tonne smooth wheeled steel roller as per MoRTH Specification Clause No. 507.	sqm	
7)	Open-Graded Premix Surfacing – Providing, laying and rolling of open-graded premix surfacing of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or cut-back or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades as per MORTH Specification Clause No. 508.	sqm	
8)	Seal Coat Type A – Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A seal coats as per MoRTH Specification Clause No. 510	sqm	

9)	Seal Coat Type B – Providing and laying of premix and seal coat with HMP of appropriate capacity not less than 75 tonne/hours using crushed stone chipping passing 2.36 mm sieve and retained on 180 micron sieve and penetration bitumen of suitable grade as per MoRTH Specification Clause No. 510.	sqm				
10)	Texturing of polished/glazed surface on concrete pavement as per the Road Maintenance Standards Clause 6.1.10.	sqm				
11)	Repair of faulting in cracks or joints in concrete pavements as per the Road Maintenance Standards Clause 6.1.13.	sqm				
12)	Repair of blow-up or buckling of concrete pavements as per the Road Maintenance Standards Clause 6.1.15.	cum				
13)	Repair of drop-off as per the Road Maintenance Standards Clause 6.1.17.	cum				
14)	Repair of concrete pavement to prevent pumping as per the Road Maintenance Standards Clause 6.1.18.	cum				

15)	Repair of concrete pavement to prevent ponding as per the Road Maintenance Standards Clause 6.1.19.	Cum	
	TOTAL FOR BILL NO. B		

Bill No. C (Section-7)

Cost Estimates for Flood Damage Repair (FDR) works and Special Repair (SR) works on

[Section from _____] to [Section to _____] (km _____ to km _____) of [NH/SH No.]

Cost Estimates for Flood Damage Repair (FDR) works and Special Repair (SR) works on [Section from _____] to [Section to _____] (km _____ to km _____) of [NH/SH No.]

Sl. No.	Description	Unit	Qty	Unit Price (₹)		Amount (₹) In Words
				In Figures	In Words	
Earthwork						
1)	Excavation of earthwork in soft soil including disposal of excavated material and backfilling complete in all respect as per MORTH Specification Clause 301	cum	[]			
2)	Maintenance of earthfill in Footpaths/Median/Islands wherever they exist such as in main corridor, parking areas, bus bays and truck laybys etc. including filling and compaction with approved material with all leads and lifts as per MORTH Specification Clause 305	cum	[]			
Sub base, Base and Shoulder(Non Bituminous)						
3)	Providing and laying of Granular sub base In main carriageway, parking areas, truck layby and bus laybys etc. as per Grading [I or II or III as specified for the Contract] as per MORTH Specification Clause 401	cum	[]			
4)	Providing and laying of wet mix macadam in main carriageway and in parking areas, truck and bus laybys etc. as per MORTH Specification Clause 406	cum	[]			

Bituminous Course (Flexible Pavements)				
5) Providing and laying bituminous concrete (asphaltic concrete) in main carriageway, parking areas, truck and bus laybys etc.as per MORTH Specification Clause 509	cum	[]		
6) Providing 25 mm thick mastic asphalt wearing course in main carriageway, Toll Plaza area, Bridge decks, Intersections etc. all as per MORTH Specification Clause 515.	sqm	[]		
7) Supply and laying 2 coat surface Dressing complete as per MORTH Specification Clause 510.	sqm	[]		
8) Laying 25 mm SDBC complete as per requirement complete as per MORTH Specification Clause 508.	cum	[]		
9) Laying 20 mm MSS complete as per MORTH Specification Clause 512.	sqm	[]		
10) Laying 20 mm OGPs with Seal Coat complete as per MORTH Specification Clause 511 & 513 respectively.	sqm	[]		
<i>(not all the above may be required. Only the items required based on the road type, may be provided.)</i>				

Road Safety Measures		RM	[]
11	Providing and fixing metal beam crash barrier by providing and erecting Type-A "W" metal beam crash barrier comprising 3 mm thick corrugated steel metal beam rail, 70 cm above road/ ground level, fixed on ISMC series channel vertical post, 150 X 75 X 5 mm fixed 2 m centre to centre, 1.8 m high, 1.1 m below ground/ road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to confirm to IS-1367 and IS-1364, metal beam rail to be fixed on vertical post with a spacer of channel section 150 X 75 X 5 mm, 330 mm long complete as per MORTH Specification Clause 810 and as per Drawing No.1A, 1B & 1C of Volume - 5.		
Traffic Signs, Markings and other Road Appurtenances			
12	Providing and fixing precast reinforced cement concrete M - 20 grade stones as under including excavation, foundation concrete M - 20, reinforcement, inscription etc. all complete as per MORTH Specification Clauses 804 and 806		
a)	5 th km stone (Standard design as per IRC:8)	No	[]
b)	km stone (Standard design as per IRC:8)	No	[]
c)	hectometer stone (Standard design as per IRC:8)	No	[]

13	Providing and fixing retroreflectorised cautionary, mandatory and informative signs as per IRC-67 as under made of high intensity grade sheeting vide MORTH Technical Specification clause 801.3, fixed over Aluminum sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M-15 grade concrete 45 x 45 x 60 cm, 60 cm below ground level as per approved drawings and MORTH Specification Clause 801	RM []	RM []	
14	Carrying out repair to road signs including strengthening, resetting or otherwise repairing signs and delineators made out of retro reflective sheets. Job also include patch repair to retro reflective sheet sign/script and repainting of posts with approved quality of enamel paint, complete work as directed by the Engineer.	RM []	sqm []	
15	Providing the Road markings such as center line, lane markings, edge lines, stop lines, pedestrian crossing lines, chevron marking etc. to match with existing pattern at road surface all complete as per MORTH Specification Clause 803			
				Miscellaneous
16	Removal of fallen trees, overturned vehicles, traffic signs, traffic signals, electric poles, telephone poles etc. and any other material flown or fallen on highway causing the disruption in free flow of traffic on road all complete	No. []		

17	Providing the appropriate temporary protection measure including applying temporary load such as stacking of sand filled bags or bags filled with locally available material at location and upto a height decided by the Engineer and all complete	cum	[]		
19	Construction of temporary diversion road and reconstruction of damaged road including dismantling and disposing of damaged part of road, reusing the suitable material, loosening of existing earth material, constructing sub grade, granular sub base, WMM base and bituminous courses all complete	LM	[]		
20	Desilting the blocked cross drains and longitudinal drains using suitable mechanical means as per the direction of Engineer	LM	[]		
TOTAL FOR BILL NO. C					

Note : - Additional items for Special Repair Works may be included depending upon site specific requirements or in case it is envisaged to carry out specific repair / rehabilitation of cross drainage structures including bridges.

Bill No. D (Section-7)

Day Works

Requirements for Day Works, if any, may be decided depending upon project specific requirements.

(SECTION-8)

SUMMARY OF ASSETS

**Summary of Assets on [NH/SH No.] from [Name of Section
from _____ to _____] km[_____] to km[____]**

Note: 1. Description given herein after is brief and quantities are approximate. These are inserted only for the guidance of bidders. Bidders during site visit interms of **Clause 1.6 of Section-I** of Volume-I are required to estimate their own quantities and verify the assets thoroughly before quoting their bid. They will not be entitled to any claim lateron irrespective of the fact, whether they visit the site or not to estimate their own quantities and verification of state of assets.

2. To be read in conjunction with Volume 2 Section VI Part-B Supplementary Performance Specifications

SI.No Asset	Description
1) Main Carriageway	Total Carriageway Length(on both sides) = ____ km (Average Width = ____ m)
2) Paved Shoulder	Total Length on either side (Average width ____ m) = ____ km
3) Service Roads	Total Length on either side (Average width = ____ m) = ____ km
4) Toll plazas	No of Toll plazas = ____ nos. i) km ____ ii) km ____ iii) km ____ iv)
5) Laybys	Total number of laybys = ____ nos. Average Length of layby = ____ m each Average width = ____ m
6) Medians	Total length = ____ km (Width = ____ to ____ m) i) Concrete/Tiled median = ____ km ii) Shrubbred median = ____ km
7) Footpaths	Total Length of Paved footpath on either side = ____ km (Average Width = ____ m)
8) Safety Fencing	Total length of safety fence = ____ km i) New Jersey Type Crash barrier = ____ km ii) Corrugated steel W-beam = ____ km
9) Traffic Signs	a) Total number of traffic signs = ____ i) Informatory = ____ ii) Mandatory/Regulatory = ____ iii) Warning/Cautionary = ____

- 10) Bridge/
CD works a) Total number of culverts = _____
 i) Pipe culverts = _____
 ii) Box/Slab culverts = _____
 b) Total number of Bridges = _____
 (i) Major Bridges = _____
 (ii) Minor Bridges = _____
 c) Total number of ROBs= _____
 d) Total number of flyovers
- 11) Underpasses a) Total Number of Vehicular Underpasses= _____
 b) Total number of Pedestrian Underpasses= _____

(SECTION-9)

ANY OTHER DOCUMENTS

(The Official amendments to this document would be published by the IRC in its periodical, 'Indian Highways' which shall be considered as effective and as part of the code/guidelines/manual, etc. from the date specified therein)