GOVERNMENT OF BIHAR

ROAD CONSTRUCTION DEPARTMENT

MODEL BIDDING DOCUMENT (MBD)

FOR

LONGTERM OUTPUT AND PERFORMANCE BASED ROAD ASSETS MAINTENANCE CONTRACT (OPRMC)

August -2013
GOVERNMENT OF BIHAR

ROAD CONSTRUCTION DEPARTMENT

MODEL BIDDING DOCUMENT FOR

LONG TERM OUTPUT AND PERFORMANCE BASED ROAD ASSETS MAINTENANCE CONTRACT (OPRMC)

Name of work: Long Term Output and Performance Based Road Maintenance Work for the roads under division

Package No. : 00/OPRMC/[Name of Division]
INVITATION FOR BID (IFB)
GOVERNMENT OF BIHAR
ROAD CONSTRUCTION DEPARTMENT

Office of the Executive Engineer, .................Division, .................
DETAILED NOTICE INVITING TENDER (through e_procurement mode only –
www.eproc.bihar.gov.in)
for Long Term Output and Performance Based Road Assets Maintenance work.

1. Designation and Address of the Advertiser : ...........................................................
2. Date of Issue of Notice Inviting Tender : ...............................................................
3. Period for download of Tender Document : From ...... to ...... upto 15.00 hrs
4. Date, Time & Place of Pre-Bid meeting : Date ...... at 11 hrs NH Inspection Bunglow
   Bihar, Patna
5. Last Date & Time for uploading tender
documents by bidder : Date ...... till ..... time 15:00 PM on
   www.eproc.bihar.gov.in
6. Date, time & place of opening of Technical
Bid : Date .......... Time 15.30 hrs.
   (Next working day after receipt of tender)
   On Website :www.eproc.bihar.gov.in
7. Last date, time and place for submission of
original instrument of EMD , cost of BOQ
   (including processing fees). : Till 15.00 hrs on ............ or next working
day of last date of uploading of tender
document by the bidders.
   Place
   (i) Executive Engineer, .............................
   or
   (ii) Superintending Engineer .................
   or
   (iii) Chief Engineer, ..............................

8. The Executive Engineer Road Division......... under District.............. Road
Construction Department on behalf of Governor of Bihar invites bids for the works detailed
below.

Project Scope & Duration: To undertake Ordinary Maintenance, Initial Rectification Works,
Periodic Maintenance Work and Minor Improvement Works and Emergency Works on select
roads totalling approximately ..........Lane Kilometres as described in para 9. The maintenance
work will also include cross drainage works, minor work on bridges and roadside maintenance
within the select road limits. The Ordinary Maintenance work will be carried out under
performance based road maintenance on a lump sum basis paid monthly. Initial Rectification
and Periodic Maintenance will be paid on measured quantity to the value of the Lump Sum
and Minor Improvement Works will be paid on the basis of actual quantities of work
completed. There is a requirement for specialized maintenance equipment and the contract
obligation is for continuous input over a period of 5 years.
Bidders are strongly encouraged to download the bidding documents prior to the pre-bid meeting in order for bidders to have a good understanding of the scope of work under this contract for discussion and clarification at the pre-bid meeting. Bidders are also advised to visit each road, be acquainted with the physical condition of road, satisfy themselves and then participate in the bid.

9. Details of works:

<table>
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<tr>
<th>Serial / Package No.</th>
<th>District / Road Division</th>
<th>Name of Roads</th>
<th>Chainage (km to km)</th>
<th>Length (Kms)</th>
<th>Estimate cost value (ECV) in Rs. Lacs</th>
<th>Earnest Money/Bid Security in Rs. Lacs</th>
<th>Name of the office where the original instrument of EMD, Cost of BOQ (including processing fee) have to be submitted</th>
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<td>10.Period of contract: 60 Months</td>
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<td>11 Date, time and place of opening of Financial Bid: Date ............. Time 15.30 hrs On Website :www.eproc.bihar.gov.in</td>
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<td>12.Bid Validity : 120 days</td>
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13. Any Contractor registered with the Central Government / any State Government or any PSU or an agency of international or national repute may participate in the tender but registration with the Road Construction Department, Bihar will be essential after issue of L.O.A and before executing the agreement.
14. Detailed NIT can be seen on website www.prd.bihar.nic.in or www.eproc.bihar.gov.in or on the notice board of the office of the undersigned.

15. For participating in the above E-tendering process, the contractors shall have to get themselves registered with the service provider so that user ID, password and digital signature are issued to them. This will enable them to access the website www.eproc.bihar.gov.in and download/participate in E-tender. For this intending bidders may contact E-procurement Helpdesk at 1st Floor, M/22 Bank of India Building, Road No.-25 Sri Krishna Nagar, Patna-80020, Telephone No. 0612-2523006, Mob No.- 9939035696

16. The undersigned reserves the right to extend or cancel the tender/tenders without assigning any reason thereof.

17. Earnest money in any form as prescribed in rule 161 of the revised PWD code and duly endorsed/pledged to the authorized departmental representative (Concerned Executive Engineer) can be in any of the following shapes or combination thereof.
   (a) Fixed Deposit receipt of Nationalized/Scheduled Bank.
   (b) Post Office/Saving Bank Passbook.
   (c) One, two or three years Post Office time deposit.
   (d) NSC issued within the State of Bihar.
   (e) 5 years National Development Bond.
   (f) State Development Loan Certificate.
   (g) For works costing more than one Crore, a Bank Guarantee of Nationalized/Scheduled Bank may also be Submitted.

The above instrument(s) shall remain valid for the minimum period of six months after last date of receipt of tender.

18. (a) A scanned image of form Fee instrument (cost of B.O.Q. including Processing fee for Beltron) which is Rs....................... (Rs..................), paid in the form of D.D of any nationalized/scheduled bank in favour of Executive Engineer, ....................... Division,................... and payable at ......................... to be uploaded along with the tender documents.
   (b) A scanned copy of the instrument(s) for Earnest Money as described in Clause 16 above to be uploaded along with the tender documents.
   (c) In respect of 17(a) and (b), the bidder shall also upload details of the instrument(s) including amount, date, serial no., bank on which drawn, office in favour of whom it is drawn/pledged and the place where they are payable.

19. Bidders/Contractors can access tender documents on the website and must fill them and submit the completed tender documents in electronic form on the website itself. Bidders/Contractors shall attach scanned copies of all required papers, D.D and certificates as required in the eligibility criteria. All the uploaded documents shall have the signature of bidder or their authorized signatories. The scanned copies should be of the original papers and certificates only.

20. Corrigendum / Addendum, if any, will be published on the website itself.

21. As per Departmental letter no. 3987(s) dated 28.04.2012, tenderers will have to declare by affidavit that they have not been declared defaulter or blacklisted by any State Government/
Central Government/ Public Undertaking. If such affidavit is subsequently found to be false, their tender shall not be considered and further legal action shall be initiated.

22. For any information / complaints the departmental helpline (no 18003456161) may be contacted.

23. Before uploading tenders, bidders are advised to go through the General Conditions, Particular Conditions and the other conditions of the MBD uploaded with the tender document.

24. It is mandatory for bidders to upload an affidavit to the effect that they are not ineligible to participate in the tender (ref: RCD letter no. 3407(s) dated 18.03.11).

25. Contractor will have to deposit additional performance guarantee for seriously unbalanced rate quoted by him at the time of agreement as per RCD letter No. 3376(E) WE dated 17.08.10

26. Bids from joint ventures are allowed as per the eligibility criteria.

27. In the unlikely event of the server for www.eproc.bihar.gov.in being down for more than two consecutive hours (in the period from midnight to closing time for receipt of tenders) on the last date of receiving of bid, the last date of the same shall automatically be extended to next working day till the last receiving time stipulated in the original NIT.

28. The bidders are requested to check their file size of uploaded documents at the time of submission & they should ensure that work file is uploaded. If they feel that the complete file is not uploaded then they should click on cancel & update the same before submission. The bidders should satisfy themselves of Download ability / visibility of the scanned & uploaded file by them.

29. The bidders are directed to zip their files using WinZip or WinRAR software only. Other formats of zipping will not be accepted and will be rejected.

30. The bidder must use MS Office-2007 or lower version.

31. File size should be less than 5MB and should be MS Word, MS Excel, PDF and JPEG Formats.

32. No claim shall be entertained on account of disruption of internet service being used by bidders. Bidders are advised to upload their bids well in advance to avoid last minute technical snags.

33. Bidders are advised to note the minimum qualification criteria specified in Clause 4, Section I of the Instructions to Bidders and Section III Evaluation and Qualification Criteria to qualify for the award of the contract.

34. Other details is can be seen in the bidding document.
Bidding Document

Long Term Output And Performance Based Road Assets Maintenance Contract (OPRMC)

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Section I. Instructions to Bidders

A. General

Scope of Bid 1.1 In connection with the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues these Bidding Documents for the procurement of Works and Services as listed below for the award of a Long Term Output and Performance-based Road Assets Maintenance Contract (OPRMC). The Works and Services under the OPRMC will cover the Roads indicated in the BDS and will consist of:

(a) Ordinary Maintenance Services or “Services” consisting of all interventions on the Roads which are to be carried out by the contractor in order to achieve and keep the Road performance standards defined by the Service Level included in the Specifications in of these Bidding Documents, and all activities related to the management and evaluation of the road network under contract.

(b) Initial Rectification Works, when requested in the BDS for the sections of the Road(s) indicated in the BDS, consisting of specific types of civil works described in the Specifications.

(c) Periodic Maintenance Works, when requested in the BDS for the sections of the Road(s) indicated in the BDS, consisting of specific types of civil works described in the Specifications.

(d) Minor Improvement Works, when requested in the BDS, consisting of a set of specific interventions indicated in the Specifications to the Roads in response to existing or new traffic and safety or other considerations.

(e) Emergency Works consisting Daywork rates for activities needed to reinstate the Roads and reconstruct their structure or their right of way which has been damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding, and earthquakes.

1.2 Throughout these Bidding Documents:

(a) the term “in writing” means communicated in written form and delivered against receipt;

(b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
(c) “day” means calendar day.

Source of Funds

2.1 The expenditure under this contract shall be made from budget of Road Construction Department, Govt. of Bihar.

Corrupt Practices

3.1 It is the State Govt.’s Policy that Bidders, Contractors, Suppliers and their subcontractors observe the highest standard of ethics during the procurement and execution of such contracts. In this context, any action taken by a bidder, supplier, contractor, or a sub-contractor to influence the procurement process or contract execution for undue advantage is improper.

(a) For the purposes of above provision, the terms set forth below are as follows:

(i) “corrupt practice” is the offering, giving, receiving, or soliciting directly or indirectly, of anything of value to influence improperly the action of another party. “Another party” refers to a public official acting in relation to the procurement process or contract execution.

(ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation. “A party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

(iii) “collusive practice” is an arrangement between two or more parties, designed to achieve an improper purpose including to influence improperly the actions of another party. “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.; and

(iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party. A “party” refers to a participant in the procurement process or contract execution;

(v) "obstructive practice" is

(va) deliberately destroying, falsifying, altering or concealing of evidence material to the
Eligible Bidders

4.1 A Bidder may be a natural person, private entity, — subject to ITB 4.4 or any combination of such entities supported by a letter of intent to enter into an agreement or under an existing agreement in the form of a joint venture or association (JVA). In the case of a joint venture or association:

(a) unless otherwise specified in the BDS, all partners shall be jointly and severally liable, and

(b) the JVA shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the JVA during the bidding process and, in the event the JVA is awarded the Contract, during contract execution.

4.2 JV shall be allowed only for the Estimated Cost Value (ECV) more than Rs. 50.00 cr.

4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:
(a) they have controlling partners in common; or

(b) they receive or have received any direct or indirect subsidy from any of them; or

(c) they have the same legal representative for purposes of this bid; or

(d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or

(e) each bidder shall submit only one bid for any work or one package or group. A bidder who submits or participates in more than one bid will cause all the proposals with the Bidder’s participation to be disqualified. However, this does not limit the inclusion of the same subcontractor in more than one bid;

(f) a Bidder participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the bid; or

(g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Government as Engineer for the contract.

4.4 Bidders shall provide such evidence of their eligibility satisfactory to the Employer, as the Employer shall reasonably request.

4.5 The bidding is open only to Bidders as stated in the BDS.

B. Contents of Bidding Document

5.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 7.

PART 1 Bidding Procedures

- Section I. Instructions to Bidders (ITB)
- Section II. Bid Data Sheet (BDS)
- Section III. Evaluation Criteria and Qualification Criteria
- Section IV. Bidding Forms

PART 2 Specifications for Works and Services
Section V. Specifications for Works and Services, Drawings if any.

PART 3 Conditions of Contract and Contract Forms

- Section VI. General Conditions (GC)
- Section VII. Particular Conditions (PC)
- Section VIII. Annex to the Particular Conditions - Contract Forms

5.2 The Invitation for Bids issued by the Employer is a part of the Bidding Document.

5.3 The Employer is not responsible for the completeness of the Bidding Documents and their addenda, if they were not obtained directly from the source stated by the Employer in the Invitation for Bids.

5.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Documents may result in the rejection of the bid.

Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

6.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Employer in writing at the Employer’s address indicated in the BDS or raise his enquiries during the pre-bid meeting if provided for in accordance with ITB 6.4. The Employer will respond to all request for clarification in pre bid meeting, provided that such request is received no later than the date of pre-bid meeting. The Employer shall upload its response on departmental website. If the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 7 and ITB 19.2.

6.2 The Bidder is required to visit and examine the Site of the Roads and its surroundings and obtain for itself and on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder’s own expense.

6.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to visit the Roads and surrounding lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of
6.4 The Bidder’s designated representative is required to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

6.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before pre-bid meeting.

6.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly through the departmental website. Any modification to the Bidding Documents that 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 ITB 7 and not through the minutes of the pre-bid meeting.

6.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

Amendment of Bidding Document

7.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Documents by issuing addenda.

7.2 Any addendum issued shall be part of the Bidding Documents and shall be posted on departmental website.

7.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 19.2

C. Preparation of Bids

Cost of Bidding

8.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

Language of Bid

9.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in Hindi.

Documents Comprising the Bid

10.1 The Bid shall comprise the following:

(a) Letter of Bid;
(b) completed schedules as required, including priced Bills of Quantities, in accordance with ITB 11 and 13;

(c) Bid Security, in accordance with ITB 17;

(d) alternative bids, if permissible, in accordance with ITB 12;

(e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 16.2;

(f) documentary evidence in accordance with ITB 15 establishing the Bidder’s qualifications to perform the contract if its Bid is accepted;

(g) Technical Proposal in accordance with ITB 14; and

(h) any other document required in the BDS.

10.2 In addition to the requirements under ITB 10.1, bids submitted by a JVA shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed agreement.

Letter of Bid, and Schedules

11.1 The Letter of Bid and Schedules, including the Bills of Quantities, shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

Alternative Bids

12.1 Unless otherwise indicated in the BDS, alternative bids shall not be considered.

12.2 Except as provided under ITB 12.3 below, Bidders wishing to offer technical alternatives to the requirements of the bidding document must first price the Employer’s design as described in the bidding document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.

12.3 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Initial Rectification, Periodic Maintenance and/or Minor Improvement Works, and such parts will be identified in the BDS, as will the method for their evaluating, and described in Section V, Work’s
Bid Prices and Discounts

13.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Bills of Quantities shall conform to the requirements specified below.

13.2 The Bidder shall fill in rates and prices for all items of the Works and Services described in the Bills of Quantities. Items against 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 rates for other items and prices in the Bills of Quantities.

13.3 The price to be quoted in the Letter of Bid, in accordance with ITB 11.1, shall be the total price of the Bid, excluding any discounts offered.

13.4 The Bidder shall quote any unconditional discounts and the methodology for their application in the Letter of Bid, in accordance with ITB 11.1.

13.5 Unless otherwise provided in the BDS and the Contract, the rates and prices quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract.

13.6 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

Documents Comprising the Technical Proposal

14.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV, in sufficient detail to demonstrate the adequacy of the Bidders’ proposal to meet the requirements of Section V, Specifications.

Documents Establishing the Qualifications of the Bidder

15.1 To establish its qualifications to perform the Contract in accordance with Section III, Evaluation and Qualification Criteria, the Bidder shall provide the information requested in the corresponding information sheets included in Section IV, Bidding.
Forms.

**Period of Validity of Bids**

16.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Employer. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

16.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 16, it shall also be extended for forty five (45) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security.

**Bid Security**

17.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its bid, a bid security in original form and in the amount specified in the BDS. The scanned image of bid security shall be uploaded along with the bid document as per e-tendering process. The original instrument of the bid security shall be deposited in the offices up to the date and time as specified in NIT.

17.2 The Bid Security/ Earnest Money shall be a demand guarantee at the Bidder’s option, in any of the following forms:

(a) Fixed Deposit receipt of Nationalized/Scheduled Bank and Valid for six months after last date of receipt of tender.
(b) Post Office/Saving Bank Passbook.
(c) One, two or three years Post Office time deposit.
(d) NSC issued within the State of Bihar.
(e) 5 years National Development Bond.
(f) State Development Loan Certificate.
(g) For works costing more than one Crore, a Bank Guarantee of Nationalized/Scheduled Bank may also be Submitted.

The bid security shall be valid for forty five (45) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 16.2

17.3 Any bid not accompanied by an enforceable and compliant bid security, if one is required in accordance with ITB 17.1, shall be rejected by the Employer as non-responsive.

17.4 The bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder’s furnishing of
the performance security pursuant to ITB 34.2

17.5 The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

17.6 The bid security will be forfeited:

if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid Form, except as provided in ITB 16.2 or

if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB 33; or
(ii) furnish a performance security in accordance with ITB 34.

17.7 The bid security of a JVA shall be in the name of the JVA that submits the bid. If the JVA has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1.

Format and Signing of Bid

18.1 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

Deadline for Submission of Bids

19.1 The bids must be uploaded by the bidder not later than the date and time as indicated in BDS.

19.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 7, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

Bid Opening

20.1 The technical bid shall be opened electronically at the place, date and time as specified in detailed NIT. through website
E. Evaluation and Comparison of Bids

Confidentiality

21.1 Information relating to the evaluation of bids and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.

21.2 Any attempt by a Bidder to influence the Employer in the evaluation of the bids or Contract award decisions may result in the rejection of its bid.

21.3 Notwithstanding ITB 21.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.

Clarification of Bids

22.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer’s request for clarification and the response shall be in writing. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 26.

22.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Contracting Agency’s request for clarification, its bid may be rejected.
Deviations, Reservations, and Omissions

23.1 During the evaluation of bids, the following definitions apply:

(a) “Deviation” is a departure from the requirements specified in the Bidding Document;

(b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and

(c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Document.

Determination of Responsiveness

24.1 The Employer’s determination of a bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB10.

24.2 A substantially responsive bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

(a) if accepted, would

(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or

(ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer’s rights or the Bidder’s obligations under the proposed Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

24.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 14.

24.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

Nonmaterial Nonconformities

25.1 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of
the bid. Failure of the Bidder to comply with the request may result in the rejection of its bid.

**Correction of Arithmetical Errors**

26.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

26.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be disqualified.

**Evaluation of Bids**

27.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

27.2 To evaluate a bid, the Employer shall consider the following:

(a) the bid price, excluding Provisional Sums;

(b) price adjustment for correction of arithmetic errors in accordance with ITB 26.1;

(c) price adjustment due to discounts offered in accordance with ITB 13.4;

(d) the evaluation factors indicated in Section III, Evaluation and Qualification Criteria;

27.3 The estimated effect of the price adjustment provisions of the Conditions of Contract applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.
27.4.1 If the bid, which results in the lowest Evaluated Bid Price, is unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Schedule of Prices, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased as per the RCD letter no. 3376(E) dt. 17.08.10 at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

27.4.2 If the value of periodic maintenance in any one year exceeds 35% of the total periodic maintenance, the bid shall be considered seriously unbalanced and bid shall be rejected.

27.5 The price of the Initial Rectification, Periodic Maintenance, Minor Improvement and/or Ordinary Maintenance Works included in each bid shall not be lower/higher than the threshold indicated in the BDS. If the Bidder estimates that its costs for the Initial Rectification, Periodic Maintenance Minor Improvement Works are lower/higher than the threshold indicated in the BDS, it shall include the portion lower/above the threshold in its price for the Ordinary Maintenance Services. If the bid which results in the lowest Evaluated Bid Price is above the threshold indicated in the BDS for the Initial Rectification, Periodic Maintenance, Minor Improvement Works and/or Ordinary maintenance the Employer shall reject the bid.

**Comparison of Bids**

28.1 The Employer shall compare all substantially responsive bids to determine the lowest evaluated bid, in accordance with ITB 27.2.

28.2 After application of the criteria established in Sub-Clauses 27.1 to 27.5, the Evaluated Bid Price for comparison of bids will be:

(a) The lump-sum price offered by the Bidder for the Ordinary Maintenance Services; plus

(b) The lump-sum price offered by the Bidder for the Initial Rectification Works, if the bidding documents require prices for this type of works; plus

(c) The lump-sum price offered by the Bidder for the Periodic Maintenance Works, if the bidding documents require prices for this type of works; plus
Qualification of the Bidder

29.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

29.2 The determination shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB 15.1.

29.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Employer shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder’s qualifications to perform satisfactorily conforming to relevant provision.

Employer’s Right to Accept Any Bid, and to Reject Any or All Bids

30.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract

Award Criteria

31.1 The Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

Notification of Award

32.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the “Letter of Acceptance”) shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the Works (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”) and the requirement for the Contractor to remedy any defects therein as prescribed by the Contract.

32.2 Until a formal contract is prepared and executed, the notification...
of award shall constitute a binding Contract.

### Signing of Contract

33.1 Promptly after notification, the Employer shall prepare the Contract Agreement.

33.2 Within twenty-one (21) days of receipt of the LOA, the successful Bidder shall sign the contract agreement after submission of performance security as per 34.1.

### Performance Security

34.1 Within twenty-one (21) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in the form as stated in para 17.2 of ITB alone and valid upto 28 days from the date of expiry of the contract period.

34.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily conforming to relevant provision.
Section-II

Bid Data Sheet
Bid Data Sheet

<table>
<thead>
<tr>
<th>ITB Clause Reference</th>
<th>Bid Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Introduction</strong></td>
<td><strong>---</strong></td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The package number of the Invitation for Bids is: (No.)/OPRMC/(Name of the Division)</td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The Employer is: <strong>Government of Bihar</strong> represented by <strong>Executive Engineer</strong> ......... <strong>Road Division</strong></td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The name of the work is: Long Term <strong>Output and Performance Based Road Assets Maintenance Contract under Road Division</strong>............................................</td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The Roads included in the Bid are:</td>
</tr>
<tr>
<td></td>
<td>1) ....... km to km</td>
</tr>
<tr>
<td></td>
<td>2) ....... km to km</td>
</tr>
<tr>
<td></td>
<td>3) ....... km to km</td>
</tr>
<tr>
<td></td>
<td>4) ....... km to km</td>
</tr>
<tr>
<td></td>
<td>Details of Road Sections are contained in Clause A7 of the Technical Specifications</td>
</tr>
<tr>
<td>ITB 1.1 (b)</td>
<td>Initial Rectification works are required.</td>
</tr>
<tr>
<td></td>
<td>The Contractor is to make an independent estimate of initial rectification works necessary to bring the road to below intervention standards. For guidance estimated quantities of initial rectification works are provided in <strong>Section V -Part D of the Technical Specifications</strong>.</td>
</tr>
<tr>
<td>ITB 1.1 (c)</td>
<td>Periodic Maintenance works are required.</td>
</tr>
<tr>
<td></td>
<td>The Contractor is to make an independent estimate of periodic maintenance works necessary to bring the road to below intervention standards (Roughness Index). For guidance list of sections for periodic maintenance works has been provided in <strong>Section V -Part E of the Technical Specifications</strong>.</td>
</tr>
<tr>
<td>ITB 1.1 (d)</td>
<td>Minor Improvement works are required as detailed in <strong>Schedule 4 and Section V-Part F of Technical Specifications.</strong></td>
</tr>
<tr>
<td>ITB 1.1 (e)</td>
<td>and as further detailed in section V part G specifications for emergency works.</td>
</tr>
<tr>
<td>ITB 2.1</td>
<td>Funding: <strong>Government of Bihar (Budget of RCD)</strong></td>
</tr>
</tbody>
</table>
**ITB 4.1**  
Add the following at the end of the clause:

(c) Bids submitted by a joint venture (JV) of two or more firms as partners shall comply with the following requirements

(i) the bid shall include all the information listed in bidders qualification forms for all the partners;

(ii) the joint venture agreement should indicate precisely the role of all members of JV in respect of planning, design, construction equipment, key personal, work execution and financing of the project. All the members of JV should have active participation in execution. This should not be varied / modified subsequently without prior approval of the Employer;

“The nominated representative shall be from the lead partner of the JVA”

**ITB 4.5**  
This bid is open to all eligible Bidders.

**B. Bidding Documents**

**ITB 5.1**  
Add the following at the end of the list of Documents

- Appendices

**ITB 6.1**  
For clarification purposes only, the Employer’s address is:

Office of the Executive Engineer, Road Division, .......... Road Construction Department, Bihar.

Street Address: ..........  
City: ..........  
Pin Code: ..........  
Telephone: ..........  
Fax number: ..........  
Electronic mail address: ..........  

**ITB 6.2**  
Delete ITB Clause 6.2 and insert the following

6.2 The Bidder is required to visit and examine the Site of the Roads and its surroundings and obtain all information including maintenance requirements and environmental aspects that may be necessary for preparing the bid and entering into an Output Performance Based Maintenance Contract. A site visit is required particularly to survey the existing road condition in order to estimate the Lump Sum costs for Ordinary Maintenance, Initial Rectification Works and Periodic Maintenance. The costs of visiting the Site shall be at the Bidder’s own expense.
Delete ITB Clause 6.4 and insert the following

6.4 The Bidder’s designated representative is invited to attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

A Pre-Bid meeting will take place at the following date, time and place:

**Date:** 16.09.2013  
**Time:** 10.00 AM to 1.00 PM.  
**Place:** Conference Hall/ NH IB Near Airport, Patna

C. Preparation of Bids

**ITB 9.1**  
The language of the bid is: **English**.

**ITB 10.1 (h)**  
Append the sub clause as follows:

“An undertaking by all the partners in case of a JV to satisfy requirements of ITB cl. 4.1 (a) as provided in the Form-ELI-1.3 in Section-IV”

**ITB 12.1**  
Alternative bids **shall not** be permitted.

**ITB 12.3**  
Alternative technical solutions for the Initial Rectification, Periodic Maintenance Works and Minor Improvement Works **not be** permitted.

**ITB 13.5**  
The contract is subject to Price adjustment from the commencement of the Contract in accordance with Clause 48 of the General Conditions.

**ITB 16.1**  
The bid validity period shall be 120 days.

**ITB 17.1**  
A bid security shall be required, the amount of the bid security shall be: **Rupees ..................**The Bid security shall be duly endorsed/pledged to the Executive Engineer, road division ..........

D. Uploading and Opening of Bids

**ITB 19.1**  
For **bid submission purposes** only, the Employer’s address is:  
[Name of the Division with office]............................................[complete].  
*The bid has to be submitted by e tendering only. The last date and time*  
........................................................................................................on www.eproc.bihar.gov.in

1. Period for download of Tender Document  
   : From .......... to ....... upto 15.00 hrs  
   (from website:www.eproc.bihar.gov.in)

2. Date, Time & Place of Pre-Bid meeting  
   the Chief Engineer,. Wing  
   (address),RCD, Bihar, Patna  
   : Date ...... at 10 hrs at the Office of

3. Last Date & Time for uploading tender documents by bidder  
   : Date ...... till .... time 15:00 PM on  
   www.eproc.bihar.gov.in  

4. Date, time & place of opening of Technical
Bid Data Sheet

Bidder Executive Engineer, Road Division

5. Last date, time and place for submission of original instrument of EMD, cost of BOQ (including processing fees).

Bid Date ............ Time 15.30 hrs (Next working day after receipt of tender)

On Website: www.eproc.bihar.gov.in

Till 15.00 hrs on ............ or next day of last date of uploading of document by the bidders.

Place

(i) Executive Engineer,

or

(ii) Superintending Engineer

or

(iii) Chief Engineer

E. Evaluation and Comparison of Bids

ITB 26.2

26.2 If the Bidder that submitted the lowest evaluated bid does not accept the correction of errors, its bid shall be disqualified and the Bid security shall be forfeited in accordance with ITB 17.6(b).

ITB 27.5

The combined price for the Initial Rectification, Periodic Maintenance, Minor Improvement and /or Ordinary Maintenance Works shall have the following threshold:

(a) Upper limit-

(i) 5 percent above of the estimated cost of [IR+PM+MI] including all taxes and cess i.e Rs. .................. Crores (Rupees............... ............................... only)

(ii) 10 percent above of the estimated cost of [OM+IR+PM+MI] including all taxes and cess i.e Rs. .................. Crores (Rupees ........... ........................................ only)

(b) Lower limit- 15% below the Estimated cost of [OM+IR+PM+MI] including all taxes and cess i.e. the amount of Rupees.................. Crores (Rupees............ ........................................ only)

ITB 28.2 (e)

Delete ITB Clause 28.2(e) and insert the following

28.2 (e) The total provisional sum stipulated in schedule 5 for the Emergency works is Rs...........................................

ITB 33.2

Delete ITB Clause 33.2 and insert the following

33.2 The successful bidder shall sign and date the Contract Agreement
within twenty-one (21) days of receipt of the notification of award in the presence of the Employer’s Authorized Representative (Subjected to condition stipulated in 2.6 Note1, Section III)

| ITB 42.1 | Insert new Clause  
42.1 Dispute Review Expert |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Employer proposes that................................................................. be appointed as Dispute Review Expert under the contract at a daily fee of Rs.5000/- plus reimbursable expenses. The daily fees is applicable during site visits and conducting hearings as per Appendix-D Rules and procedures for the functioning of Dispute Review Expert. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Dispute Review Expert, the Dispute Review Expert shall be appointed by the Chairman, Institution of Engineers, Bihar at the request of either party. A draft format of letter of appointment to the agreed Dispute Review of Expert along with draft report format is attached in Appendix-D.</td>
<td></td>
</tr>
</tbody>
</table>
Section-III

Evaluation and Qualification Criteria
Section III. Evaluation and Qualification Criteria

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 27 and ITB 29, no other factors, methods or criteria shall be used. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.

1. Evaluation

1.1 Assessment of adequacy of Technical Proposal with Requirements

1.2 Technical alternatives, if permitted under ITB 12.3, will be evaluated as follows: Not Applicable

1.3 Assessment of price as listed in ITB 27.2 (a) – (d) the following criteria shall apply:

Note

1 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:
- made misleading or false representations in the forms, statements and attachments uploaded in proof of the qualification requirements; and/or
- record of poor performance such as abandoning the works, not properly completing the Contract, inordinate delays in completion, litigation history, or financial failures etc.;

2 Sub-contractor’s experience and resources shall not be taken into account in determining the Bidder’s compliance with the qualifying criteria.

3 Bidders who meet the minimum qualification criteria in factors/sub factors 2.1 to 2.6 (Qualification) will be qualified only if their available bid capacity is more than the total bid value of the works.

The available bid capacity will be calculated as under:
Assessed Available Bid Capacity = A x N x 1.5 - B

Where
A = Maximum value of works executed in any one (1) year during the last five (5) years viz 2008-09 to 2012-13 by the bidder or sum of the maximum value of works executed in any one (1) year during the said five (5) years by each of the JV partners which will take into account the completed as well as works in progress updated to 2013-14 price level*.

N = Number of years prescribed for completion of the works for which bids are invited.
B = Value at 2013-14 price level of existing commitments and on-going works to be completed by the bidder during the next 60 months or sum of the value at -2013-14 price level of the existing commitments and on going works to be completed by each of the JV partner during the next 60 months. However, where bidders are bidding for more than one contract package the value of its other substantively responsive bids will be included in the value of “B”. The Bidder is to complete form Current Contract Commitments as part of their Bid for the determination of this value.

4 Value of works of the previous financial years shall be given a weightage of 8 % per year to bring costs to 2013-14 price level.
## 2. Qualification

### 2.1 ELIGIBILITY

<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 <em>Conflict of Interest</em></td>
<td>No conflicts of interests as described in ITB 4.3.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>N / A</td>
</tr>
<tr>
<td>2.1.2 <em>Eligible Bidders</em></td>
<td>Any Contractor registered with central government/any state government or any agency of international or national repute are eligible but registration with Road Construction Department will be essential after issue of LOA.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>N / A</td>
</tr>
</tbody>
</table>
## 2.2 HISTORICAL CONTRACT NON-PERFORMANCE

<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.2.1 History of non-performing contracts</strong></td>
<td>Non-performance of a contract did not occur within the last five (5) years i.e. 2008-09 to 2012-13 prior to the deadline for application submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the bidder have been exhausted.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td><strong>2.2.2 Pending Litigation</strong></td>
<td>Information on litigation history (in which the bidder is involved must be attached.)</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
</tbody>
</table>
### 2.3 FINANCIAL SITUATION

<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.3.1 Historical Financial Performance</strong></td>
<td>Submission of audited balance sheets acceptable to the Employer, for the last five [5] years i.e 2008-09 to 2012-13 to demonstrate the current soundness of the bidders financial position and its prospective long term profitability. Should have made a net profit in any 3 years in the last five years i.e 2008-09 to 2012-13</td>
<td></td>
<td></td>
<td>Form FIN – 3.1 with attachments</td>
</tr>
</tbody>
</table>

**Single Entity**

- Must meet requirement
- Must meet requirement
- Must meet requirement
- N/A

**Joint Venture, Consortium or Association**

- All partners combined
- Each partner
- At least one partner

Form FIN – 3.1 with attachments
<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>2.3 FINANCIAL SITUATION</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3.2 Average Annual Turnover</td>
<td>Minimum average annual turnover must not be less than 40% of the value of work under initial rectification, ordinary maintenance, periodic maintenance and minor improvement in 1st year of the contract i.e Rs -----------. (calculated as total certified payments received for contracts in progress or completed, within the last five years (5) years i.e 2008-09 to 2012-13)</td>
<td>Single Entity</td>
<td>Joint Venture, Consortium or Association</td>
<td>All partners combined</td>
<td>Each partner</td>
</tr>
<tr>
<td></td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>must meet 20% of requirement</td>
<td>Must meet 50% of requirement</td>
<td>Form FIN –3.2</td>
</tr>
</tbody>
</table>
### 2.3 FINANCIAL SITUATION

<table>
<thead>
<tr>
<th>Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sub-Factor</strong></td>
<td></td>
<td>Bidder</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single Entity</td>
<td>Joint Venture, Consortium or Association</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All partners combined</td>
<td>Each partner</td>
</tr>
<tr>
<td><strong>2.3.3 Financial Resources</strong></td>
<td>The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: Credit lines/letter of credit/solvency certificates from Banks etc. shall be not less than 10% of the total estimated value i.e. Rs. .............</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
</tr>
</tbody>
</table>

Note: Financial turnover and cost of completed works of previous financial years shall be given a weighting of 8% per year based on rupee value to bring costs to 2013-2014 price level.
### 2.4 EXPERIENCE

<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.4.1 General Experience</strong></td>
<td>Experience under Road maintenance or Improvement Contract as contractor/ subcontractor, BOT, BOOT Developers/ Operators or management contractors for at least the last five [5] years (i.e. 2008-09 to 2012-13) prior to the applications submission deadline.</td>
<td>Must meet requirement</td>
<td>Single Entity</td>
<td>Joint Venture, Consortium or Association</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Must meet requirement</td>
<td>All partners combined</td>
<td>Each partner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Must meet requirement</td>
<td>N/A</td>
<td>Must meet requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Must meet requirement</td>
<td>Form EXP-4.1</td>
<td>Form EXP-4.1</td>
</tr>
<tr>
<td><strong>2.4.2 Specific Experience</strong></td>
<td>a) Participation as contractor, management contractor, or subcontractor or BOT, BOOT Developer / Operator, with in the last five(5) years (i.e. 2008-09 to 2012-13), in road construction or maintenance works contracts, of which up to four contracts have a combined value not less than 50% of ECV i.e. Rs. ........................ and have been successfully and substantially completed. The completed works should be similar to proposed works and services in the proposed contract.</td>
<td>Must meet requirement</td>
<td>Must meet requirement</td>
<td>Must meet minimum of 20% of requirement</td>
</tr>
</tbody>
</table>

*Note: The table continues with similar entries for other criteria.*
<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Single Entity</td>
<td>Joint Venture, Consortium or Association</td>
</tr>
</tbody>
</table>

For the purpose of the above requirement:

(i) OPRMC Contracts shall be considered as substantially completed if the Contractor has completed all Minor Improvement works and Initial Rectification Works fully and also completed minimum of 50% of Periodic Maintenance items;

(ii) all other types of contracts shall be considered as substantially completed if the contractor has completed 90% of the Value of Works.
## Section III Evaluation and Qualification Criteria

### 2.4 EXPERIENCE

<table>
<thead>
<tr>
<th>Sub-Factor</th>
<th>Requirement</th>
<th>Criteria</th>
<th>Bidder</th>
<th>Documentation Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Single Entity</td>
<td>Joint Venture, Consortium or Association</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All partners combined</td>
<td>Each partner</td>
</tr>
<tr>
<td>2.4.2 <em>Specific Experience</em></td>
<td>b) For the above or other contracts executed in any one year, the bidder should have executed the following minimum quantities of work:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Concrete works (MoRTH Specification Section 1703 all grades) – …………</td>
<td>Must meet requirements</td>
<td>Must meet requirements</td>
<td>Must meet 50% of requirements</td>
</tr>
<tr>
<td></td>
<td>- Non Bituminous Sub-bases and Bases (GSB, WBM, WMM) (MoRTH Specification Sections 400) – ………………</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bituminous Treatment (BM, DBM, BC, SDBC) (MoRTH Specification Sections 500) – ………………..</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Financial turnover and cost of completed works of previous financial years shall be given a weighting of 8% per year based on rupee value to bring costs to 2013-2014 price level.
2.5 Personnel

The Bidder must demonstrate that it has the personnel for the key positions that meet the following requirements:

<table>
<thead>
<tr>
<th>Position</th>
<th>No.</th>
<th>Educational Qualification</th>
<th>Total Work Experience in construction and maintenance (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Manager</td>
<td>1</td>
<td>Graduate in Civil Engg. / Diploma in Civil Engg.</td>
<td>Graduate – 10 Diploma - 15</td>
</tr>
<tr>
<td>Maintenance Engineer</td>
<td>1</td>
<td>Diploma in Civil Engg.</td>
<td>10</td>
</tr>
<tr>
<td>Works Supervisor</td>
<td>1</td>
<td>Preferably: Diploma in Civil Engg/ any general degree holder</td>
<td>Diploma – 3 General Degree - 5</td>
</tr>
</tbody>
</table>

The Bidder shall provide details of the proposed personnel and their experience records using Forms PER-1 and PER-2 included in Section IV, Bidding Forms supported by the experience certificates duly countersigned by the respective clients.
2.6 Equipment

The Bidder must demonstrate that it has or has access to (own, lease, hire etc and to be procured) the key equipment (machinery) listed hereafter:

<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment Type and Characteristics</th>
<th>Minimum Number required</th>
<th>Maximum age of the Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 ton Tipper truck</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Loader / back hoe (0.5 m³ bucket)</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Excavator (0.75 m³ bucket)</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>hot mix plant (40-60 t/hr capacity)</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Sensor paver (3.5m)</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>Bitumen distributor (2000 litre)</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>8-10 ton vibratory roller</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Plate Vibrator (Compaction for patch work)</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Emulsion sprayer</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>10</td>
<td>Tractor or Rubber Tyred Dozer with adjustable Back Blade/Grader</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>11</td>
<td>Smooth wheeled roller 8 to 10 Ton</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>12</td>
<td>Power broom or Tractor Mounted Compressor</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>13</td>
<td>Wet Mix Plant</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>Generator 250 KVA</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>Concrete mixer 0.4 /0.28 Cum</td>
<td>2</td>
<td>15</td>
</tr>
</tbody>
</table>

The minimum level of suggested major equipment required to carry out the works in accordance with the prescribed Works Schedule are shown in the above list. However, notwithstanding the above, the contractor shall be required to provide all necessary items and numbers of equipment, plant and materials in order to carry out the prescribed works within the required timeframes.

Note:

1. If the bidder proposes to lease or hire the machineries, then he will have to commission it within 60 days of issue of LOA and agreement shall be executed there after only. If the contractor fails to do so his bid security shall be forfeited and award shall be cancelled. In that case second lowest bidder may be awarded the work under conditions explained in the bid document.

2. In case the bidder proposes to buy new sensor paver and WMM plant, the machinery advance to the limit of 85% of cost of new plant shall be granted but the maximum advance shall not be more than 5% of contract amount.
3. The bidder shall furnish an undertaking on Rs 100/- stamp paper that in case of awarding of work to him, he will fabricate & convert a new 6 tonne truck into a Patrol Maintenance Unit (PMU) duly satisfying the terms specified in clause C2 under section V of technical specifications within 15 days from the date of signing agreement, machinery advance shall be granted for PMU if desired.

4. The bidder shall furnish an undertaking on Rs 100/- stamp paper that in case of awarding of work to him, he will procure new fifth wheel Bump Integrator within 15 days from the date of signing agreement.
Section IV. Bidding Forms

- LETTER OF BID
- BID SECURITY
- WORK SCHEDULES
- TECHNICAL PROPOSAL
- EVALUATION AND QUALIFICATION FORMS
Letter of Bid

Date: ____________________________
Invitation for Bid No.: ____________

To:
The Executive Engineer,

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 7;

(b) We offer to execute in conformity with the Bidding Document the following Works: ____________________________

Our bid price, excluding any discounts offered in item (f) below, is composed of the following components:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (in rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Ordinary Maintenance Services in an amount of</td>
<td></td>
</tr>
<tr>
<td>[amount in words]</td>
<td></td>
</tr>
<tr>
<td>(b) Initial Rectification Works in an amount of</td>
<td></td>
</tr>
<tr>
<td>[amount in words]</td>
<td></td>
</tr>
<tr>
<td>(c) Periodic Maintenance Works in an amount of</td>
<td></td>
</tr>
<tr>
<td>[amount in words]</td>
<td></td>
</tr>
<tr>
<td>(d) Minor Improvement Works in an amount of</td>
<td></td>
</tr>
<tr>
<td>[amount in words]</td>
<td></td>
</tr>
<tr>
<td>(e) Emergency Works in an amount of [amount in words]</td>
<td></td>
</tr>
<tr>
<td>(f) TOTAL = a + b + c + d + e</td>
<td></td>
</tr>
</tbody>
</table>

(c) We hereby confirm that our quoted bid price is inclusive of all duties, taxes, and other levies payable by us under the contract in accordance with ITB Clause 13.6 read with ITB Bid Data Sheet Clause 13.6

(d) We hereby confirm that our combined price for Initial Rectification Works, Periodic Maintenance Works, Minor Improvement and Initial Rectification Works, Periodic Maintenance Works, Minor Improvement, Ordinary Maintenance Works does not
lowered/exceed the threshold given in the BDS (27.5), which is [insert amount or percentage of the total contract price].

(e) We hereby confirm that the value of any one single year of the Periodic Maintenance does not exceed 35% of the total Periodic Maintenance value.

(f) The discounts offered and the methodology for their application is: ____________________________

________________________________________________________________________________;

(g) Our bid shall be valid for a period of ____________ days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(h) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;

(i) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB-4.3;

(j) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with ITB-4.3, other than alternative offers submitted in accordance with ITB-12;

(k) We accept the appointment of Sri ......................... as Dispute Review Expert. (OR) We do not accept the appointment of Sri as Dispute Review Expert and propose instead that ---- ----------------------------- be appointed as Dispute Review Expert whose daily fees and biographical data are attached.

(l) We accept daily fees of Rs 5,000/- plus reimbursable expenses for Dispute Review Expert and daily fee is applicable during site visits and conducting hearings.
(OR) We do not accept daily fees of Rs.5,000/- plus reimbursable expenses for Dispute Review Expert and our proposal for daily fee is attached.

(m) We, including any of our subcontractors or suppliers for any part of the contract, have not been declared blacklisted / debarred from any department.

(n) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and

(o) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

(p) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.
(q) We are participating as a Joint Venture and the responsibilities and obligations of each of the partners have been submitted in the bid. Further an undertaking signed by all the partners of the Joint Venture as per prescribed format (Form ELI-1.3) is also attached.

Name ____________________________  In the capacity of ________________________

Signed __________________________

Duly authorized to sign the bid for and on behalf of ______________________________

Dated on ___________________________ day of _______________________, ______
BID SECURITY (BANK GUARANTEE)

WHEREAS, [name of Bidder] (hereafter called "the Bidder") has submitted his Bid dated [date] for the construction of [name of Contract hereinafter called "the Bid"].

KNOW ALL PEOPLE by these presents that We [name of Bank] of [name of country] having our registered office at [address], (hereinafter called "the Bank") are bound unto [name of Employer] (hereinafter called "the Employer") in the sum of [amount] for which payment well and truly to be made to the said Employer the Bank itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this __________ day of __________, 20____.

THE CONDITIONS of this obligation are:

1. If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;

OR

2. If the Bidder having been notified to the acceptance of his bid by the Employer during the period of Bid validity:
   (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
   (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
   (c) does not accept the correction of the Bid Price pursuant to Evaluation and Comparison Clause 21 to 30 of instruction to bidder (ITB).

We undertake to pay to the Employer up to 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 will note that the amount claimed by him is due to his owing to the occurrence of one or any of the three conditions, (specifying the occurred condition or conditions).

This Guarantee will remain in force up to 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, 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.

DATE_________________________ SIGNATURE _________________________

WITNESS ___________________________ SEAL ____________________________

[Signature, name and address]

* The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in BDS ITB 17.1.

** 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.
WORKS SCHEDULE

Preamble

The following Schedules are included in this Contract:

Bid Summary Schedule

This totals the bids in Schedules 1, 2, 3 and 4 below and a provisional sum for Emergency/Day works in Schedule 5.

Schedule 1 – Ordinary Maintenance (Lump Sum)

Ordinary Maintenance will be payable as a proportionate monthly Lump Sum over the 5 years period of the Contract.

Schedule 2 – Initial Rectification Works (Lump Sum)

Schedule includes Initial Rectification Works to be completed within the first 6/9 working months from the date of notice to the proceed with the work to bring the road to below intervention standard. Initial Rectification Works is a firm lump sum that will be measured and paid on the actual work outputs.

Schedule 3 – Periodic Maintenance Works (Lump Sum)

Schedule includes Periodic Maintenance Works for Years 1 to 4 is a firm lump sum that will be measured and paid on the actual work outputs.

Schedule 4 – Minor Improvement Works (Unit Item Rates)

Comprise items for measurement and payment of various works to be completed within years 1 and 2 as approved by the Engineer-in-charge. Only the actual quantities of work completed as certified by the Engineer-in-charge will be paid.

Schedule 5 – Emergency/Day Works (Provisional sum)

Comprises provisional sum for emergency /day works that may be instructed by the Engineer-in-Charge. Only the actual quantities of work completed and approved by the Engineer-in-charge will be paid.

Works and Payments

1. Works Schedules shall be read in conjunction with the General Conditions, Particular Conditions Sheet, Technical Specifications, Contract Quality Plan and Drawings.

2. Ordinary Maintenance shall be tendered as a Lump Sum Payment shall be monthly and made on the basis of the tendered price divided by 60 months. The Initial Rectification work shall be tendered as lump-sum amount, while indicating the quantities of measurable outputs to be executed in order that the road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the progress in the execution of those measured outputs.

3. The Periodic Maintenance items shall be tendered as lump sum amount, while indicating the quantities of measurable outputs to be executed in order that the road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the progress in the execution of those measured outputs.
4. The quantities given in the Works Schedule for Minor Improvement Works are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contactor and verified by the Engineer-in-charge and valued at the rates and prices tendered in the priced Works Schedule.

5. The rates and prices tendered in the Works Schedule shall allow for and include all plant, labour, supervision, testing, materials, mobilisation, demobilisation, maintenance, insurance, profit, taxes, levies and duties, together with all general risks, liabilities and obligations etc. set out or implied in the Contract.

6. General directions and descriptions of work and materials are not necessarily repeated nor summarised in the Works Schedule. References to the relevant sections of the contract documentation shall be made before entering prices against each item in the priced Works Schedule.

7. All works completed under the Contract shall be measured according to the metric system for all items, unless otherwise provided herein or in the Special provisions.

8. All measurements for area or volume will be made horizontally along and perpendicular to the centre line of the road, and no deductions will be made for individual fixtures in the pavement having an area of one square meter or less.

9. Emergency / Day work Rates – Provisional sum is made under Work Schedule 5 to meet the Emergency/Day Works. The Rates quoted for the items under Schedule 4 shall be applicable for similar items executed under Emergency/Day works. Items not covered under schedule 4 shall taken from current SOR (The SOR applicable just before the execution of work). The lead of materials shall be approved by SE and it will be mandatory upon the contractor. Even if any item is left out the new rate of these shall be arrived as per clause 61 and 63 of General Conditions of Contract. Rates are subject to price adjustment in accordance with Clause 48 of the General conditions.

11. Note the following
   a) Items for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Works Schedule (refer: ITB Clause 13.2).
   b) Unit rates and prices shall be quoted by the bidder in Indian Rupees
   c) Where there is a discrepancy between the rate in figures and words, the rates in words will govern. [ITB Clause 26.1]
   d) Where there is a discrepancy between the unit rate and the amount, the unit rate quoted shall govern [ITB Clause 26.1].
   e) Price escalation is allowed for all the schedules (except items for emergency work covered under current SOR) as per clause 48 of the general conditions.
Works Schedule 1, 2, 3, 4 and 5
Name of work: Long term Output and Performance based Road Assets Maintenance of Roads under road division

Bid Summary Schedule

<table>
<thead>
<tr>
<th>Sched. No.</th>
<th>Description</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Schedule 1 – Ordinary Maintenance (Lump Sum) Total for 60 months</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Schedule 2 – Initial Rectification Works (Lump Sum) – Initial works to bring the road to below the Intervention level (to be executed within first 6/9 Months)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Schedule 3 – Periodic Maintenance (Lump Sum) – Years, 1, 2, 3, and 4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Schedule 4 – Minor Improvement Works Unit Item Rates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>...........................................................................................................</td>
<td>Years 1 and/or 2</td>
</tr>
<tr>
<td>5</td>
<td>Schedule 5 – Emergency Works / Day works (Provisional Sum)</td>
<td></td>
</tr>
</tbody>
</table>

Total Bid Price (in figures) ................................................

Total Bid Price (in words) ................................................
## SCHEDULE 1 – ORDINARY MAINTENANCE (LUMP SUM)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description of item</th>
<th>Qty</th>
<th>Rate Per Month</th>
<th>Amount In figure (Rs)</th>
<th>Amount In words (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ordinary Maintenance (Lumpsum): under following roads (with chainage) :-</td>
<td></td>
<td>60 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) ..................</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) ..................</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) ..................</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) ..................</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above price is the full remuneration to the Contractor to carry out the services and works required in order to reach and maintain the service levels described in the Specifications and elsewhere in the contract. It further includes the activities of the Contractor related to self-control, quality assurance and material testing, hire and operational charges of Petrol Maintenance Unit (PMU) and 5th wheel Bump-integrator.

Total Schedule 1 Price

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer total to Bid summary Schedule</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:

1. Schedule 1 shall include for costs associated with Contract obligations which are not specifically provided for elsewhere, including, but without being limited to; the provision of insurances, Security, implementing Quality Plan requirements, HIV-AIDS Prevention measures, the maintenance and operational costs of PMU all environmental, safety and traffic management requirements, conducting various Inspections, surveys etc.

2. No extra costs shall be paid for change in lane widths due to improvements taken up under this contract/other contracts, as long as such Cumulative changes do not increase the initial bituminous surface area under the contract by more than 10%.

3. The cost difference as per BDS clause 27.5 assessed by the bidder if any is deemed to be included in the quoted Ordinary Maintenance Lump-sum cost.
Schedule 2. INITIAL RECTIFICATION WORKS (Lump Sum)

Work and materials shall be in accordance with the MORTH Specification as indicated in Part B (Section V)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description of Item</th>
<th>Quantity (actual Length of the package)</th>
<th>Unit</th>
<th>Rate (Rs)</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Repairs to bituminous carriage way wherever required to bring the specified service level for the damages pot holes, rut, cracks &amp; depressions, delaminating, stripping, edge breaking, dig out etc, by taking up:</td>
<td></td>
<td>Km</td>
<td>In figures</td>
<td>In words</td>
</tr>
</tbody>
</table>

(a) Tack coat (Clause 503) - 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.

(b) BM (Clause 504) - Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading GRADE-II (as per table 500-4 of MORT&H specification 504 (4th Revision) premixed with bituminous binder 60/70 grade @ 3.3% by weight of total mixture.) 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.

(C) SDBC (Clause 508) - Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour...
using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, 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 specification clause No. 508 complete in all respects.

d) Digouts upto GSB level and providing with WMM, BM and 25mm SDBC as per the adjacent road crust thickness and MoRT&H specification GSB at clauses 406, 504, 508 (4th revision)

(e) **Light surface sealing** — A light seal of bitumen emulsion and 7mm aggregate shall be applied of badly cracked pavement, provided the pavement is sound.

(f) Slurry sealing-(clause 516 of MORT&H)
Providing and laying slurry seal consisting of a mixture of fine aggregates, portland cement filler, bituminous emulsion and water on a road surface including cleaning of surface, mixing of slurry seal in a suitable mobile plant, laying and compacting to provide even riding surface.

g) Edge repairs as per MoRT&H specification 503,501,504 and 407.

h) Any additional activity necessary to achieve the service level objective.
### Section IV: Bidding Forms

#### 2.2 Repairs to shoulders / Construction of Earthen shoulders on both sides of the carriageway wherever required to bring the service level (with 3% camber)

<table>
<thead>
<tr>
<th></th>
<th>..........</th>
<th>Km</th>
<th>..........</th>
<th>..........</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Repairs to low shoulders by construction of earth gravel shoulder as per MoRT&amp;H Specification 305.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Repairs to high shoulders by Removal of Land Slip Material/Debris/Unsuitable Soil and disposal at approved spoil sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Earth work excavation in all soils by stripping of excessive soil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 2.3 Removal of jungle on both sides of the road to bring the service level by uprooting and burn to ashes - (Clause 201)- Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.

<table>
<thead>
<tr>
<th></th>
<th>..........</th>
<th>Km</th>
<th>..........</th>
<th>..........</th>
</tr>
</thead>
</table>

#### 2.4 Repairs to cross drainage works including culverts, minor bridges to specified service levels by taking up

(a) **Brick masonry with Cement Mortar (1:6)**

(Clauses1300 - Rate of Brick work in CM. 1:6 In Foundation -
--- Brick Masonry Work in Cement Mortar 1:3 in Foundation complete excluding Pointing and Plastering, as per Drawing and Technical Specifications).

(b) **RR masonry with Cement Mortar (1:6)**
### Section IV: Bidding Forms

**Government of Bihar – Road Construction Department**

**LONG TERM OUTPUT AND PERFORMANCE BASED ROAD ASSETS MAINTENANCE CONTRACT BID DOCUMENTS**

**Clause 1400** - Stone Masonry Work in Cement Mortar 1:3 in Foundation -- (B) Random Rubble Masonry -- Stone Masonry Work in Cement Mortar 1:3 in Foundation complete as per Drawing and Technical Specifications.

(c) Plastering with Cement Mortar (1:4)

(d) Pointing with Cement Mortar (1:4)

(e) white washing two coats

(f) pitching

(g) Plain Cement Concrete (1:3:6)

**Clause 2100, PCC-1:3:6 in Foundation** - Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days.

(h) **Plain** Cement Concrete M15 grade-

**Clause-1500 - PCC M15 Grade** -- Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.

(i) painting with synthetic enamel paint

(j) Revetment etc.

   i. Minor Bridges

   ii. RCC Slab / Cut-stone Slab / Arch Culverts

   iii. Pipe culverts

#### 2.5 Providing Road safety and informatory items complete as per specifications (Clause 800) such as

   a) Providing and Fixing Retro Reflectorised signs -

   b) Nos

   c) Km

   d) Nos

   e) Nos

   f) Nos

   g) Nos

   h) Nos

   i) Nos

   j) Nos

   k) Nos

   l) Nos

   m) Nos

   n) Nos

   o) Nos

   p) Nos

   q) Nos

   r) Nos

   s) Nos

   t) Nos

   u) Nos

   v) Nos

   w) Nos

   x) Nos

   y) Nos

   z) Nos

**Bidder**

**Executive Engineer, Road Division**
Informatory sign boards (120x45cm), Triangle (60x60x60mm), Village name boards Rectangular (90x45mm), Junction boards, etc b) KM stones with CC M15 grade d) Guard stones/ Guide post with CC M15 grade e) Any other items to to achieve the service level objective.

<table>
<thead>
<tr>
<th>2.6 Providing Road marking by using</th>
<th>.......</th>
<th>Km</th>
<th>........</th>
<th>........</th>
<th>........</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Hot Applied Thermoplastic compound 2.5mm thick including reflectorising glass beads with (Clause 803-Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface-Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35). The finished surface to be level, uniform and free from streaks and holes). i) centre line marking 3.00 m. length and 10 cm width with a gap of 4.5 m as per IRC:35 ii) edge painting and curve painting (continuous) as per IRC:35</td>
<td>.........</td>
<td>.........</td>
<td>.........</td>
<td>.........</td>
<td></td>
</tr>
<tr>
<td>b) Providing and fixing of reflective pavement markers (Road studs) (Road Markers/Road Stud with micro prismatic Lens Reflector-Providing and fixing of road stud 100x100 mm, die-cast moulded from ASA (Acrylic strene acylonitrile) High impact poly styrene or ABS body resistant to minimum support a load of 13635 Kg and Fitted with micro prismatic lence Reflector installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per MORTH Letter NO. RW/NH/33023/10/97-DO-III dt. 11-06-97)</td>
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<td>.........</td>
<td>.........</td>
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</tr>
</tbody>
</table>
### Section IV: Bidding Forms

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<thead>
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</thead>
<tbody>
<tr>
<td><strong>2.7</strong></td>
<td>Any additional activities the bidder considers necessary to achieve the service level objective.</td>
<td>km</td>
<td>.............</td>
</tr>
</tbody>
</table>

**TOTAL SCHEDULE 2 PRICE (IN FIGURES)**

.............

Transfer total to Bid Summary Schedule

.............

**Note:**

1. **As a guide** a list of quantities of Initial Rectification Work activities have been provided in Clause D2 of the Technical Specification to assist the contractor with the completion of this schedule. The information supplied is indicative quantities as determined by the Employer and should not be interpreted as the contractual requirement for these activities. The contractor will need to assess the current road conditions and determine what works are needed to meet the timetables for service level compliance.

2. The bidder has to quote his lump sum amount duly assessing the current condition and deterioration module of the road.
## SCHEDULE 3: PERIODIC MAINTENANCE WORK ITEMS (Lump Sum) - Years 1 to 4

Work and materials shall be in accordance with the MORTH Specification clause in B4.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description of Item</th>
<th>Annual Quantity</th>
<th>Unit</th>
<th>Rate (Rs)</th>
<th>Amount (Rs)</th>
</tr>
</thead>
</table>
| 3.1      | Providing Periodical maintenance to Single and Intermediate lanes including profile correction with the following items of work to obtain the required service level.  
(a) **Tack coat (Clause-503)** - 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.  
(b) **SDBC (Clause 508)** - Providing and laying semi dense bituminous concrete with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, 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 specification clause No. 508 complete in all respects  
(c) Providing shoulders MoRT&H Specification 305. |                 | In figures  | In words |
(width .......) using gravel to the required the service level.

<table>
<thead>
<tr>
<th>3.1.1</th>
<th>Single lane year wise (Carriage way width ≤ 3.75m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate shall be quoted assuming per kilometre carpet area as 3750 m². Payment shall be proportionately increased or decreased as per the actual area of the kilometre.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For 1&lt;sup&gt;st&lt;/sup&gt; Year</td>
<td>......</td>
<td>Kms</td>
<td>...........</td>
</tr>
<tr>
<td>For 2&lt;sup&gt;nd&lt;/sup&gt; Year</td>
<td>......</td>
<td>Kms</td>
<td>...........</td>
</tr>
<tr>
<td>For 3&lt;sup&gt;rd&lt;/sup&gt; Year</td>
<td>......</td>
<td>Kms</td>
<td>...........</td>
</tr>
<tr>
<td>For 4&lt;sup&gt;th&lt;/sup&gt; Year</td>
<td>......</td>
<td>Kms</td>
<td>...........</td>
</tr>
</tbody>
</table>
### 3.1.2 Intermediate lane year wise

(Carriage way width > 3.75m and < 7.0 m)

Rate shall be quoted assuming per kilometre carpet area as 5500 m². Payment shall be proportionately increased or decreased as per the actual area of the kilometre.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Length (Kms)</th>
<th>Rate (per 5500 m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1rd</td>
<td>...</td>
<td>...</td>
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<tr>
<td>2nd</td>
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<tr>
<td>3rd</td>
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<tr>
<td>4th</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

### 3.2 Providing Periodical maintenance to Double and Multi lanes including profile correction (Carriage width ≥ 7.0m)

Providing and laying semi dense bituminous concrete with 100-120 TPH batch type

(a) Tack coat (Clause 503) - 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.

(b) SDBC (Clause 508) - Providing and laying semi dense bituminous concrete with 100-120 TPH batch type
HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 to 5 per cent of mix and filler, 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 specification clause No. 508 complete in all respects. Providing shoulder width ............. using with 3% camber to the required the service level for low shoulders as per MORT&H Specification305.

d) Providing centre line marking(Hot Applied Thermoplastic compound 2.5 mm thick including reflect rising glass beads with ) 3m length and 10 cm width with a gap of 4.5m and edge painting as per IRC:35.,

d) Providing Continuous edge line marking (Hot Applied Thermoplastic compound 2.5mm thick including reflect rising glass beads with) for multi lanes and curve portions of double lane with 10 cm width as per IRC:35.,

e) Providing and fixing of reflective pavement markers (Road studs) Road Markers/Road Stud with micro prismatic Lense Reflector- Providing and fixing of road stud 100x 100 mm, die-cast moulded from ASA (Acrylic strene acrylonitrite) High impact poly styrene or ABS f.) Providing repairs to median wherever necessary.

g) Maintenance of greenery already existing on median
3.2.1 Double lane year wise
Rate shall be quoted assuming per kilometre carpet area as 7000 m$^2$. Payment shall be proportionately increased or decreased as per the actual area of the kilometre.

<table>
<thead>
<tr>
<th>Year</th>
<th>Length (Kms)</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>...</td>
<td>...</td>
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<tr>
<td>2nd</td>
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<td>3rd</td>
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<td>4th</td>
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</tbody>
</table>

3.2.2 Double lane with paved shoulders of width

<table>
<thead>
<tr>
<th>Year</th>
<th>Length (Kms)</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>...</td>
<td>...</td>
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<tr>
<td>2nd</td>
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<td>...</td>
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<tr>
<td>For 3rd Year</td>
<td>......</td>
<td>Kms</td>
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<tr>
<td>For 4th Year</td>
<td>......</td>
<td>Kms</td>
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</tbody>
</table>

**LUMPSUM TOTAL SCHEDULE 3 PRICE FOR YEARS 1 TO 4 (IN FIGURES)**  

Transfer total to Bid Summary Schedule  

<table>
<thead>
<tr>
<th>Note 1</th>
<th>All rates shall be subject to Price Adjustment</th>
</tr>
</thead>
</table>

As a guide a list of quantities of Periodical maintenance activities have been provided in Clause E2 of the Technical Specification to assist the contractor with the completion of this schedule. The information supplied is indicative quantities as determined by the Employer and should not be interpreted as the contractual requirement for these activities. The contractor will need to assess the current road conditions and determine what works are needed to meet the timetables for service level compliance.

2. The suggested quantities provided in clause E2 of technical specifications are minimum to be executed. The bidder shall not quote the Quantities less than the suggested quantities. However the bidder may quote quantities in excess of the suggested quantities based upon his assessment to meet the specified service levels.
### Schedule 4. MINOR IMPROVEMENT WORKS (Reconstruction and Structural Overlay and CC pavement)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description of Item (Sections as detailed in Clause F2)</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate (Rs)</th>
<th>Amount (Rs)</th>
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</thead>
<tbody>
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<tr>
<td></td>
<td><strong>Year-1 Works</strong></td>
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<td>4.2</td>
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<td>4.3</td>
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<td>4.4</td>
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<td>4.5</td>
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<td>4.6</td>
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<td>4.7</td>
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<td>4.8</td>
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<tr>
<td>4.9</td>
<td>Forming Embankment with approved materials as per MORT&amp;H Specification 305 4th Revision for Shoulder</td>
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<td>Cum</td>
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<tr>
<td></td>
<td><strong>YEAR-2 Works</strong></td>
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<td>4.16</td>
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</tbody>
</table>
SCHEDULE 4. TOTAL SCHEDULE 4 PRICE (IN FIGURES)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisional Sum towards Emergency Works / Day Works</td>
<td>.....</td>
</tr>
</tbody>
</table>

TOTAL SCHEDULE 4 PRICE (IN FIGURES) .................................................

Transfer Total to Bid Summary Schedule ..............................................

Note: Technical Specification for the above items are covered in section V of the Technical Specification

SCHEDULE 5. EMERGENCY WORKS/DAY WORKS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Description</th>
<th>Amount Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisional Sum towards Emergency Works / Day Works</td>
<td>.....</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SCHEDULE 5 PRICE (IN FIGURES) .................................................

Transfer total to Bid Summary Schedule
Technical Proposal
The bidder’s Technical Proposal shall include the following elements:

SCHEDULE I    Projected Cash Flow
SCHEDULE II   Site Organizations
SCHEDULE III  Subcontractors
SCHEDULE IV   Contractor’s Equipment (including Form EQU)
SCHEDULE V    Initial Tentative Program of Performance
SCHEDULE VI   Key Personnel Proposed (including Form PER 1 & 2)
SCHEDULE VII  Project Specific Information
SCHEDULE VIII  Evaluation and Qualification Data

In addition to the above Schedules the Bidder will be required to complete the following form and if needed, contractor may provide necessary information in their own format.

Instructions on how to present the various schedules of the Technical Proposal are given within each Schedule. The Bidder should attach descriptions, drawings and charts as appropriate.
SCHEDULE 1

Projected Cash Flow

(1) Bidders shall tabulate below estimates, based on their preliminary work program, of:

(a) On the expenditure side, the value of the work which will be carried out;

(b) On the revenue side, the net payments to which they will become entitled with due allowance for the advance payment and repayment, materials prepayments, and retention money, but excluding price adjustments for rise and fall and provisional sums for emergency works.

(c) The projected net cash flow during the contract period.

(2) The prospective successful bidder may be required to submit full details to substantiate his estimates.

<table>
<thead>
<tr>
<th>Period (Months)</th>
<th>Cost/Value of Initial Rectification, Periodic Maintenance and Minor Improvement Works [indicate amount]</th>
<th>Cost/Value of Ordinary Maintenance Services [indicate amount]</th>
<th>Net Payments to be received [indicate amount]</th>
<th>Net Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Date</td>
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<td>1 to 6</td>
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<td>6 to 12</td>
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<td>12 to 18</td>
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<td>54 to 60</td>
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<tr>
<td>… etc.</td>
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<tr>
<td>Total</td>
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</tr>
</tbody>
</table>

Estimated consecutive 3 months peak cash flow during 1st year ________________________
SCHEDULE II

Site Organization

Bidders shall give below full particulars of the organisation they propose to establish, direct, and administer the performance of the Contract. In particular, bidders shall indicate the location of site camps and the resources they intend to allocate to Self Control Units for planning and monitoring purposes.

1. SITE ORGANIZATION CHART

2. NARRATIVE DESCRIPTION OF SITE ORGANISATION CHART

“The Contractor shall designate either the Road Manager or the Maintenance Engineer as the Environmental Officer (EO) who is familiar with Environmental aspects of Road Projects and will be responsible for the Environmental Management”
SCHEDULE III

SUBCONTRACTORS

Bidders shall list below those parts of the Works and Services which they propose to subcontract, and state the approximate value of those parts and the names and addresses of the proposed subcontractors. Bidders shall also list other business partners involved in the execution of the contract and their respective roles and responsibilities. Subcontracting is allowed only up to 50% of the total work including plant and equipment, Specified work (utility shifting), provision of labour and supply of materials. In no case Ordinary maintenance/PMU (Patrol Maintenance Unit) shall be subletted.

Sub contracting of work is allowed only to the contractor who is domicile of Bihar.

Part of Works / Services:
Approximate value:
Name and address of proposed subcontractor:

Part of Works / Services:
Approximate value:
Name and address of proposed subcontractor:

Part of Works / Services:
Approximate value:
Name and address of proposed subcontractor:

Approximate value of total Subcontracted work of Rs. .............................
SCHEDULE IV

Contractor’s Equipment

Form EQU

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed (with a current new purchase price exceeding Rs. 200,000), or for alternative equipment proposed by the Bidder.

<table>
<thead>
<tr>
<th>Item of equipment</th>
<th>Equipment information</th>
<th>Name of manufacturer</th>
<th>Model and power rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capacity</td>
<td></td>
<td>Year of manufacture / Condition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current status</th>
<th>Current location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of current commitments</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Indicate source of the equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Owned □ Rented □ Leased □ Specially manufactured</td>
</tr>
</tbody>
</table>

Omit the following information for equipment owned by the Bidder.

<table>
<thead>
<tr>
<th>Owner</th>
<th>Name of owner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address of owner</td>
</tr>
<tr>
<td></td>
<td>Telephone</td>
</tr>
<tr>
<td></td>
<td>Fax</td>
</tr>
<tr>
<td>Agreements</td>
<td>Details of rental / lease / manufacture agreements specific to the project</td>
</tr>
</tbody>
</table>
The bidder should list all the information requested for items of Contractor’s Equipment essential for carrying out the works. Factor 2.6 Equipment Section III Evaluation and Qualification Criteria

The tenderer has to submit with a certificate issued by the Executive Engineer (or) a Declaration on non judicial stamp paper worth Rs 100/- along with sufficient proof of document in support of owning such as Invoice / Certificate of Registration by competent authority in support of the critical equipment.
SCHEDULE V

Initial Tentative Program of Performance

To demonstrate a clear understanding of the requirements of the Contract, bidders shall provide the following:

(i) a bar chart sub-divided into sections for each road showing the major activities to be carried out for Initial Rectification, Periodic Maintenance and Minor Improvement Works. The activities shall be shown against time, with linkages shown between related/sequential activities as far as possible and appropriate.

(ii) a bar chart or schedule showing the usage of major plant, including those listed in Schedule IV (Contractor’s Equipment). Duly supported with equipment planning and deployment, showing with broad calculations justifying the bidder’s capability for the execution and completion of the work as per the technical specifications and within the periods of completion as per the stipulated milestones.
## SCHEDULE VI

### Key Personnel Proposed

#### Form PER -1

#### Key Personnel proposed by Bidder

<table>
<thead>
<tr>
<th>Position</th>
<th>Quantity</th>
<th>Name</th>
<th>Qualifications</th>
<th>Years of experience (Construction and Maintenance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Road Manager</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance Engineer</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works Supervisor</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The CV’s (or resumes) for each of the proposed key personnel are presented in Forms PER – 2 below.

“The Contractor shall designate either the Road Manager or the Maintenance Engineer as the Environmental (EO) who is familiar with Environmental aspects of Road Projects and will be responsible for the Environmental Management”
Form PER-2

Resume of Proposed Personnel

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Date of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional qualifications</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Present employment | Name of employer | | |
|---------------------|------------------|---------------|
| Address of employer | | |
| Telephone | Contact (manager / personnel officer) |
| Fax | E-mail |
| Job title | Years with present employer |

Summarize professional experience over the last 20 years, in reverse chronological order. Indicate particular technical and managerial experience in Road construction and maintenance.

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Company / Project / Position / technical and management experience in road construction and maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Undertaking/ consent letter**

**Signature of the personnel**
SCHEDULE VII
PROJECT SPECIFIC INFORMATION

The Bidder shall provide Statements in respect to the following information

- Proposed methodology for undertaking Ordinary Maintenance (OM), Initial Rectification (IR), Periodic Maintenance (PM) and Minor Improvement Works (MI), and identification of road sections that major activities shall be applied.

- Details of safety, traffic, environmental management aspects to be adopted by the Contractor. “as per the Checklist provided in Appendix F.1. The Contractor may modify the checklist subsequently during mobilization period (road inventory) if awarded.”

- Contractor’s experience in managing testing of work.

- Statement indicating whether:
  
  I. the Bidder accepts the Sample Quality Plan and if so, that the Bidder will provide an updated Quality Plan within the timeframe stated in A14.1 of Specifications, if awarded the contract; or

  II. the Bidder does not accept the Sample Quality Plan, in which case the Bidder will be required to provide its own Quality Plan in accordance with Section V, within the timeframe stated in A14.1 of Specifications, and which as a minimum, includes the same level of detail as the Sample Quality Plan and explains the purpose, application, responsibilities and requirements to undertake works in accordance with the intent of the contract, the general provisions for the occupational health and safety of employees and the public, environmental management requirements and the Statutory Laws of India Statement in respect to the Quality Plan.

- All bidders shall provide with their Bid a preliminary description of the proposed work method and program and resource schedules, including drawings and charts, as necessary.
Schedule VIII
Evaluation and Qualification Data
In addition to Forms EQU, PER1 & 2 already contained in the previous Schedules, the following forms contain the information required for the Evaluation and Qualification detailed in Table

1. **Form ELI 1.1** - 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;

2. **Form ELI 1.2** - Copies of original documents defining the constitution or legal status, place of registration, and principal place of business of the Joint Venture;

3. **Form ELI 1.3** - Undertaking by The Joint Venture Partners (On Non-Judicial Stamp Paper of Appropriate Value if required)

4. **Form CON 2** - information regarding any litigation, arbitration or blacklisting, resulting from contracts executed by the Bidder in the last five years or currently under execution. The information shall include the names of the parties concerned, the disputed amount, cause of litigation, and matter in dispute;

   Form CON 2.1 – Information regarding litigation.

5. **Form FIN 3.1** - reports on financial standing of the Bidder, such as profit and loss statements and auditor’s reports for the past five years;

6. **Form FIN 3.2** – Average annual Turnover;

7. **Form EXP 4.1** - experience in Construction works for each of the last five years,

8. **Form EXP 4.2(a)** - experience in works of a similar nature and size for each of the last five years,

9. **Form EXP 4.2(b)** - experience in works in Key Activities for each of the last five years,

10. **Form CCC** - details of works under way or contractually committed and clients who may be contacted for further information on those contracts;

11. **Form FIN 1** - evidence of adequacy of working capital for this contract, access to line(s) of credit and availability of other financial resources; and authority to seek references from the Bidder's bankers;

**Note:** In addition to the above documents, the bidder shall furnish the evidence of documents relating to VAT, Registration, Latest Commercial Tax clearance Certificate, PAN card.
Applicant Information Form
Form ELI -1.1

The Bidder should provide the following information for:

<table>
<thead>
<tr>
<th>Bidders legal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>In case of Joint Venture (JV), legal name of each partner:</td>
</tr>
<tr>
<td>Bidders year of constitution:</td>
</tr>
<tr>
<td>Bidders legal address</td>
</tr>
<tr>
<td>Bidders authorized representative information</td>
</tr>
<tr>
<td>Name:</td>
</tr>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Telephone/Fax numbers:</td>
</tr>
<tr>
<td>Mobile No.:</td>
</tr>
<tr>
<td>E-mail address:</td>
</tr>
</tbody>
</table>

Attached are copies of original documents of
- Articles of Incorporation or Documents of Constitution, and documents of registration of the legal entity named above.
- In case of JV, letter of intent to form JV or JV agreement.
- Proof of registration as a contractor with Government of Bihar if any.
- Power of Attorney of Signatory of Bid.
## Applicant's Party Information Form

### Form ELI -1.2

Each partner to a JVA should provide the following information for:

<table>
<thead>
<tr>
<th><strong>JV applicant legal name:</strong></th>
<th>[insert full legal name]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JV applicant's Party legal name:</strong></td>
<td>[insert full legal name of Applicant’s Party]</td>
</tr>
<tr>
<td><strong>JV applicant's Party registration:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>JV applicant Party's year of constitution:</strong></td>
<td>[indicate year of constitution]</td>
</tr>
<tr>
<td><strong>JV applicant Party's legal address of constitution:</strong></td>
<td>[insert street/number/town or city/country]</td>
</tr>
<tr>
<td><strong>JV applicant Party's authorized representative information</strong></td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>[insert full legal name]</td>
</tr>
<tr>
<td>Address:</td>
<td>[insert street/number/town or city/country]</td>
</tr>
<tr>
<td>Telephone/Fax numbers:</td>
<td>[insert telephone/fax numbers, including country and city codes]</td>
</tr>
<tr>
<td>Mobile No.:</td>
<td></td>
</tr>
<tr>
<td>E-mail address:</td>
<td>[indicate e-mail address]</td>
</tr>
</tbody>
</table>

### Attached are copies of original documents of

- Articles of Incorporation or Documents of Constitution, and Registration Documents of the legal entity named above.
- Proof of registration as a contractor with Government of Bihar if any.
Form ELI –1. 3: FORM OF UNDERTAKING BY THE JOINT VENTURE PARTNERS  
(On Non-Judicial Stamp Paper of Appropriate Value if required)

THIS JOINT DEED OF UNDERTAKING executed on this........ day of........ Two Thousand and ................by....... a company incorporated under the laws of ................... and having its Registered Office at...................(hereinafter called the "Party No.1" which expression shall include its successors, executors and permitted assigns) and M/s.............a company incorporated under the laws of...................and having its Registered Office at.................. (hereinafter called the "Party No.2" which expression shall include its successors, executors and permitted assigns ) and M/s. .. .. . .. . .. . .. . .. . .. . .. . .. . .. . .. a Company incorporated under the laws of............................................ and having its Registered Office at................... (hereinafter called the "Party No.3" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract (hereinafter called the "Contract"[in case of award]) for the work of “long term Output and performance based Road assets maintenance contract for the maintenance of Roads under Road division .................” taken up under Road Construction Department by Executive Engineer , Road Division ........ (hereinafter called the "Employer").

WHEREAS the Party No.1, Party No.2 and Party No.3 have entered into an Agreement dated................

AND WHEREAS the Employer invited bids for the above mentioned work as per the scope of work and specifications stipulated in the bidding documents.

AND WHEREAS Clause 10.1 (h) of Section-II - BDS stipulates that an Undertaking signed by all the partners of the Joint Venture shall be submitted along with the Bid so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

AND WHEREAS the bid is being submitted to the Employer vide proposal No........dated...... based on this Undertaking which has been signed by all the parties.

NOW THIS UNDERTAKING WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the parties of this Deed of Undertaking do hereby declare and undertake:

1. In requirement of the award of the Contract by the Employer to the Joint Venture Partners, we, the Parties do hereby undertake that M/s........ the Party No.1, shall act
as Lead Partner and further declare and confirm that we the parties to the Joint Venture shall jointly and severally be bound unto the Employer for the successful performance of the Contract and shall be fully responsible for the execution of the work in accordance with the Contract:

2. In case of any breach or default of the said Contract by any of the parties to the Joint Venture, the party(s) do hereby undertake to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.

3. Further, if the Employer suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the work in meeting the performances guaranteed as per the specification in terms of the Contract, the Party(s) of these presents undertake to promptly make good such loss or damages caused to the Employer, on its demand without any demur. It shall not be necessary or obligatory for the Employer to proceed against Lead Partner to these presents before proceeding against or dealing with the other Party(s), the Employer can proceed against any of the parties who shall be jointly and severally liable for the performance and all other liabilities/obligations under the Contract to the Employer.

4. The financial liability of the Parties of this Deed of Undertaking to the Employer, with respect to any of the claims rising out of the performance or non-performance of the obligations set forth in this Deed of Undertaking, read in conjunction with the relevant conditions of the Contract shall, however not be limited in any way so as to restrict or limit the liabilities or obligations of any of the Parties of this Deed of Undertaking.

5. It is expressly understood and agreed between the Parties to this Undertaking that the responsibilities and obligations of each of the Parties are given in the bid. It is further undertaken by the parties that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Parties under the Contract.

6. It is also understood that this Undertaking is provided for the purposes of undertaking joint and several liabilities of the partners to the Joint Venture for submission of the bid and performance of the Contract and that this Undertaking shall not be deemed to give rise to any additional liabilities or obligations, in any manner or any law, on any of the Parties to this Undertaking or on the Joint Venture, other than the express provisions of the Contract.

7. This Undertaking shall be construed and interpreted in accordance with the provisions of the Contract.

8. In case of an award of a Contract, we the parties to this Deed of Undertaking do hereby agree that we shall be jointly and severally responsible for furnishing a Contract performance security from a bank in favour of the Employer.
9. It is further agreed that this Deed of Undertaking shall be irrevocable and shall form an integral part of the bid and shall continue to be enforceable till the Employer discharges the same or upon the completion of the Contract in accordance with its provisions, whichever is earlier. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF, the Parties to this Deed of Undertaking have through their authorised representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

Common Seal of …………………….. For Lead Partner (Party No.-1)
has been affixed in my/our presence pursuant to Board of Director’s Resolution dated ………………..

Name …………………………………

Designation …………………………

Signature ………………………………. (Signature of the authorized representative)

WITNESS :

I. ……………………………………...

II. ……………………………………...

Common Seal of …………………….. For Party No.-2
has been affixed in my/our presence pursuant to Board of Director’s Resolution dated ………………..

Name …………………………………

Designation …………………………

Signature ………………………………. (Signature of the authorized representative)

WITNESS :

Bidder

Executive Engineer, Road Division
I. ..........................................

II. ..........................................

Common Seal of ......................... For Party No.-3
has been affixed in my/ our For and on behalf of M/s.
presence pursuant to Board of .................
Director’s Resolution dated .................

Name ..........................................

Designation .................................

Signature .....................................

(Signature of the authorized
representative)

WITNESS :

I. ..........................................

II. .............................................
Historical Contract Non-Performance

Form CON – 2

The following table shall be filled in for the Bidder and for each partner of a Joint Venture

<table>
<thead>
<tr>
<th>Non-Performing Contracts in accordance with Section III, Qualification Criteria and Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Contract non-performance did not occur during the last five (5) years specified in Section III, Qualification Criteria and Requirements, sub-factor 2.2.1.</td>
</tr>
<tr>
<td>□ Contract(s) non-performed occurred during the last five (5) years specified in Section III, Qualification Criteria and Requirements, sub-factor 2.2.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Non performed portion of contract</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Lakh Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contract Identification:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for non performance:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contract Identification:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reason(s) for non performance:</td>
<td></td>
</tr>
</tbody>
</table>
### Historical Contract Non-Performance

**Form CON – 2 (cont)**

<table>
<thead>
<tr>
<th>Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ No pending litigation in accordance with Section III, Qualification Criteria and Requirements, sub-factor 2.2.2.</td>
</tr>
<tr>
<td>☐ Pending litigation in accordance with Section III, Qualification Criteria and Requirements, sub-factor 2.2.2 as indicated below.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Outcome as Percentage of Total Assets</th>
<th>Contract Identification</th>
<th>Total Contract Amount (Lakh Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contract Identification:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matter in dispute:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remark showing present Status:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contract Identification:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matter in dispute:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remark showing present Status:</td>
<td></td>
</tr>
</tbody>
</table>
Financial Situation

Form FIN – 3.1

The following table shall be filled in for the Bidder and for each partner of a Joint Venture

1. Financial data

<table>
<thead>
<tr>
<th>Financial information in Lakh Rupees</th>
<th>Historic information for previous 5 (five) years,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1 2008-09</td>
</tr>
<tr>
<td>Information from Balance Sheet</td>
<td></td>
</tr>
<tr>
<td>Total Assets (TA)</td>
<td></td>
</tr>
<tr>
<td>Total Liabilities (TL)</td>
<td></td>
</tr>
<tr>
<td>Net Worth (NW)</td>
<td></td>
</tr>
<tr>
<td>Current Assets (CA)</td>
<td></td>
</tr>
<tr>
<td>Current Liabilities (CL)</td>
<td></td>
</tr>
<tr>
<td>Information from Income Statement</td>
<td></td>
</tr>
<tr>
<td>Total Revenue (TR)</td>
<td></td>
</tr>
<tr>
<td>Profits Before Taxes (PBT)</td>
<td></td>
</tr>
</tbody>
</table>
2. Financial documents

The Bidder and its parties shall provide copies of the balance sheets and/or financial statements for last five (5) years pursuant Section III, Qualifications Criteria and Requirements, sub-factor 2.3.1.

The financial statements shall:

(a) reflect the financial situation of the Applicant or partner to a JV, and not sister or parent companies.

(b) be audited by a certified accountant.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Attached are copies of financial statements (balance sheets, including all related notes, and income statements) for the last five (5) years required above; and complying with the requirements...
Average Annual Construction Turnover

Form FIN - 3.2

The following table shall be filled in for the Bidder and for each partner of a Joint Venture.

Applicant's/Joint Venture Partner's Legal Name:

Date:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount and Currency</th>
<th>Lakh Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011-12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Annual Construction Turnover *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Average annual construction turnover calculated as total certified payments received for work in progress or completed, divided by the number of years specified in Section III, Qualification Criteria and Requirements, Sub-Factor 2.3.2.
General Construction Experience

Form EXP - 4.1

The following table shall be filled in for the Bidder and for each partner of a Joint Venture Applicant's/Joint Venture Partner's Legal Name: 

Date:

<table>
<thead>
<tr>
<th>Starting Month /Year</th>
<th>Ending Month /Year</th>
<th>Contract Identification</th>
<th>Role of Applicant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contract name:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brief Description of the Works performed by the Applicant:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amount of contract:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contract name:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brief Description of the Works performed by the Applicant:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amount of contract:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contract name:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brief Description of the Works performed by the Applicant:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amount of contract:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Name of Employer:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Address:</td>
<td></td>
</tr>
</tbody>
</table>

Identify contracts that demonstrate continuous construction work over the past five (5) years pursuant to Section III, Qualification Criteria and Requirements, sub-factor 2.4.1. List contracts chronologically, according to their commencement (starting) dates.
Similar Construction Experience  
Form EXP - 4.2(a)

The following table shall be filled in for contracts performed in the same name as the Applicant, each partner of a Joint Venture, and specialist sub contractors on Construction and Maintenance work over the last 5 years.

Applicant's/Joint Venture Partner's Legal Name:  
Date:  

<table>
<thead>
<tr>
<th>Similar Contract No.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Identification</td>
<td></td>
</tr>
<tr>
<td>Award date</td>
<td></td>
</tr>
<tr>
<td>Completion date</td>
<td></td>
</tr>
<tr>
<td>Role in Contract</td>
<td>Contractor</td>
</tr>
<tr>
<td>[check the appropriate box]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Total Contract Amount</td>
<td></td>
</tr>
<tr>
<td>If partner in a JV, or subcontractor, specify participation in total contract amount</td>
<td></td>
</tr>
<tr>
<td>Employer's Name:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
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<tr>
<td>Telephone/fax number</td>
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<tr>
<td>Mobile No:</td>
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<tr>
<td>E-mail:</td>
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</tr>
</tbody>
</table>

Description of the similarity in accordance with Sub-Factor 2.4.2(a) of Section III:

<table>
<thead>
<tr>
<th>Description of the similarity in accordance with Sub-Factor 2.4.2(a) of Section III:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contract Amount</td>
</tr>
<tr>
<td>2. Physical size i.e. length of the road, carriage width.</td>
</tr>
<tr>
<td>3. widening strengthening /IRQP/SR/PR/Maintenance -</td>
</tr>
<tr>
<td>(a) E/w</td>
</tr>
<tr>
<td>(b) GSB</td>
</tr>
</tbody>
</table>
(c) WMM
(d) BM/DBM
(e) Concreting

<table>
<thead>
<tr>
<th>4. Other Characteristics (If any)</th>
</tr>
</thead>
</table>
### Construction Experience in Key Activities

**Form EXP - 4.2(b)**

Applicant's Legal Name:  
Date:

All Contractors and Subcontractors for key activities must complete the information in this form as pursuant to Section III, Qualification Criteria and Requirements, Sub-Factor 2.4.2.

<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract Identification</strong></td>
</tr>
<tr>
<td><strong>Award date</strong></td>
</tr>
<tr>
<td><strong>Completion date</strong></td>
</tr>
</tbody>
</table>
| **Role in Contract**  
(check the appropriate box) |
| **Contractor** | **Subcontractor** |
| **Total Contract Amount** |
| **If party in a JV, specify** participation of total contract amount |
| **Employer’s Name:** |
| **Address:** |
| **Telephone/fax number** |
| **Mobile No** |
| **E-mail:** |

### Description of the key activities in accordance with Sub-Factor 2.4.2 (b) of Section III:

| **Concrete Works**  
MoRTH Spec 1703 all grades |
| **Non Bituminous Sub-Bases and Bases**  
MoRTH Spec 400 |
| **Bituminous Works**  
MoRTH spec 500 |

**Quantity of Work Performed**

Note: Attach client certificates in support of the above quantities issued by the Executive Engineer or Equivalent.
Current Commitments / Financial Resources

Current Contract Commitments / Works in Progress

Form CCC

Bidders and each partner to a JVA should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

<table>
<thead>
<tr>
<th>Name of contract</th>
<th>Employer, contact address/tel/fax</th>
<th>Value of outstanding work (current Lakh Rupees)</th>
<th>Estimated completion date</th>
<th>Average monthly invoicing over last six months (Lakh Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<tr>
<td>etc.</td>
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</tbody>
</table>

Note: The statement showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be issued by the Executive Engineer or equivalent.
Financial Resources

Form FIN-1

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section III, Evaluation and Qualification Criteria.

<table>
<thead>
<tr>
<th>Source of financing</th>
<th>Amount Lac Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>3.</td>
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</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

Note:

1. The Bidder is required to provide evidence of the above by attaching supporting documentation. A sample Format for evidence of access to or availability of credit facilities is attached.

2. The Bidder is required to provide authority for the Employer to seek references from the Bidders Banker. Name, address, e-mail, and telephone, mobile, telex and facsimile numbers of banks that may provide references are to be provided.
SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

BANK CERTIFICATE

This is to certify that M/s. .................................. is a reputed company with a good financial standing.

If the contract for the work, namely ................................................................. is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs. ............... to meet their working capital requirements for executing the above contract.

______________
Name of Bank

Senior Bank Manager

Address of the Bank
PART 2

TECHNICAL SPECIFICATIONS
SECTION -V
Technical Specifications

- Part A – Management Requirements
- Part B – General Specifications
- Part C – Ordinary Maintenance
- Part D – Initial Rectification Works
- Part E – Periodic Maintenance
- Part F – Minor Improvement Works
- Part G – Emergency Works
- Part H – Environmental Requirements
Section V, Part A
Management Requirements

A1. Long Term Output- and Performance-based road assets Maintenance Contracts Concept

A2. General

A3. Definitions

A4. Scope of Services

A5. Reference Information

A6. Description of the project area

A7. Description of the Roads Included in Contract

A8. Self-Control Unit of Contractor

A9. Specification for Service Level Criteria

A10. Functions of Key Personnel

A11. Method of Inspection of Service Levels
    A11.1 Formal Inspections of Service Levels
        A11.1.1 Ordinary Inspections
        A11.1.2 Hazard Inspections
        A11.1.3 Bridge & Culvert Inspections
        A11.1.4 Night Inspections
        A11.1.5 Emergency Inspections
    A11.2 Informal Inspections of Service Levels

A12. Contract Supplied Equipment
    A12.1 Communication Equipment

A13. Specification for the Provision of Management Information
    A13.1 Monthly Site Meeting and Monthly Report
        A13.1.1 Monthly Statement
        A13.1.2 Monthly Works program
        A13.1.3 Monthly Progress
        A13.1.4 Previous Meeting Minutes
    A13.2 Milestone Reporting Requirements
        A13.2.1 Initial Road Condition Report
        A13.2.2 Milestone 1 Report
        A13.2.3 Milestone 2 Report
        A13.2.4 Milestones 3 and 4 Reports
        A13.2.5 Milestone 5 (Handover) Report
    A13.3 Update of Road Administration Database

A14. Program of Performance
    A14.1 Contractor’s Quality Assurance Plan
        A14.2 Health and Safety Management Plans
        A14.3 Emergency Procedures and Contingency Plan
        A14.4 Traffic Management Plan
        A14.5 Environmental Management Plan
A1. LONGTERM Output & Performance-Based Roads Assets Maintenance Contract Concept

1. Long Term Output- and Performance-based contracting for roads assets is designed to increase the efficiency and effectiveness of road asset management and maintenance. It should ensure that the physical condition of the roads under contract is adequate for the need of road users, over the entire period of the contract. This type of contract significantly expands the role of the private sector, from the simple execution of works to the management and conservation of road assets.

2. In traditional road construction and maintenance contracts, the Contractor is responsible for the execution of works which are normally defined by the Employer, and the Contractor is paid on the basis of unit prices for different work items, i.e., a contract based on “inputs” to the works. The results of traditional road contracts are in many cases less-than-optimal. The problem is that the Contractor has the wrong incentive, which is to carry out the maximum amount of works, in order to maximize its turnover and profits. Even if the work is carried out according to plan and much money is spent, the overall service quality for the road user depends on the quality of the design given to the Contractor who is not accountable for it.

3. The OPRMC addresses the issue of inadequate incentives. During the bidding process, contractors compete among each other by essentially proposing fixed lump-sum prices for bringing the road to a certain service level and then maintaining it at that level for a relatively long period. It is important to understand that contractors are not paid directly for “inputs” or physical works (which they will undoubtedly have to carry out), but for achieving specified Service Levels, i.e., the Initial Rectification and Periodic Maintenance of the road to pre-defined standards (if so required by the bidding documents), the Ordinary maintenance service of ensuring certain Service Levels on the roads under contract, and specific improvements (if so required by the bidding documents), all representing outputs or outcomes. A monthly lump-sum remuneration paid to the Contractor will cover all physical and non-physical maintenance services provided by the Contractor, except for unforeseen emergency works which are remunerated separately. The Periodic Maintenance Works which have been explicitly specified by the Employer in the contract are quoted on the basis of measurable output quantities and paid as performed. In order to be entitled to the monthly payment for Ordinary maintenance services, the Contractor must ensure that the roads under contract comply with the Service Levels which have been specified in the bidding document. It is possible that during some months he will have to carry out a rather large amount of physical works in order to comply with the required Service Levels and very little work during other months. However, his monthly payment remains the same as long as the required Service Levels are complied with. The Initial Rectification works are also paid on the basis of measurable output quantities and paid as performed. The Minor Improvements are paid on BOQ basis. Whenever Emergency/Day works are executed through specific work orders, the same are paid based on measured inputs.

4. A fundamental feature of the OPRMC is that the “Contractor” must not necessarily and in all cases be a traditional works contractor, but can (if allowed in the Bidding Documents) be any type of firm or business venture having the necessary technical, managerial and financial capacity to fulfil the contract. In any case, the contractor is responsible for designing and carrying out the works, services and actions he believes are
necessary in order to achieve and maintain the Service Levels stated in the contract. The Service Levels are defined from a road user’s perspective and may include factors such as average travel speeds, riding comfort, safety features, etc. If the Service Level is not achieved in any given month, the payment for that month may be reduced or even suspended.

5. Under the OPRMC, the Contractor has a strong financial incentive to be both efficient and effective whenever he undertakes work. In order to maximize profits, he must reduce his activities to the smallest possible volume of intelligently designed interventions, which nevertheless ensure that pre-defined indicators of Service Level are achieved and maintained over time. This type of contract makes it necessary for the Contractor to have a good management capacity. Here, “management” means the capability to define, optimize and carry out on a timely basis the physical interventions which are needed in the short, medium and long term, in order to guarantee that the roads remain above the agreed Service Levels. In other words, within the contract limitations and those required to comply with local legislation, technical and performance specifications and environmental regulations, the Contractor is entitled to independently define: (i) what to do, (ii) where to do it, (iii) how to do it, and (iv) when to do it. The role of the Road Administration and of the Employer is to enforce the contract by verifying compliance with the agreed Service Levels and with all applicable legislation and regulations.

6. Maintaining a road network includes both ordinary and periodic (maintenance) tasks. Ordinary maintenance consists of many different tasks frequently necessary to maintain the function of the road (such as pothole repairs, cleaning of drainage, sealing of cracks, cutting of vegetation, etc.). Periodic maintenance consists of predictable and more costly measures of a less frequent nature designed to avoid road degradation (such as resurfacing, bituminous concrete overlays, etc.). Intelligent management, the timeliness of interventions and the adequacy of technical solutions are critical. It is expected that the use of private specialized firms under output- and performance-based contracts will unleash significant efficiency gains, and stimulate innovation in comparison with traditional road administration practices.

7. Minimum road conditions and Service Levels are defined through output and performance measures, and these are used under the OPRMC to define and measure the desired performance of the Contractor. In the OPRMC the defined performance measures are thus the accepted minimum intervention levels for the quality levels of the roads for which the Contractor is responsible.

8. The performance criteria should ideally cover all aspects of the contract and take account of the fact that different sub-areas within the contract area might require different Service Levels. Criteria can be defined at three levels (although simpler contracts will not use all of the criteria identified below):

(a) **Road User Service and Comfort** measures are expressed in terms of:
   - Rutting
   - Depressions
   - Skid resistance
   - Visibility of road signs and markings
   - Response times to rectify defects that compromise the safety of road users
   - Attendance at road accidents
- Drainage off the pavement (standing water is dangerous for road users)
- Vegetation control
- Slope Stabilisation
- The extent of repairs permissible before a more extensive periodic maintenance treatment is required
- Degree of sedimentation in drainage facilities

(b) **Road Usability** measures, are expressed in terms of:
- Travel delays
- Availability of each lane-km for use by traffic

- Road Roughness

(c) **Management Performance Measures**, which define the information the Employer requires both to govern the asset during the term of the contract, and to facilitate the next tender round. Requirements should include:
- Delivery of regular progress reports to the Road Controlling Authority
- Inventory updates and other data sharing requirements
- Maintenance history (so subsequent tenderers can price the work).
- Environmentaland Requirements

To avoid ambiguity, all performance measures are clearly defined and objectively measurable.

9. Together the performance measures define the minimum acceptable Service Level for the particular road. In setting the measures various criteria (both technical and practical) were carefully considered, such as (i) traffic volume and composition, (ii) urban vs. rural roads (iii) sub-grade quality and type, (iv) quality of available construction materials, (v) capacity of available contractors. **However, probably the most important criterion is the question of what Service Level can be afforded and economically justified for the road in question.**

10. Under the terms of the contract, the Contractor will also be responsible for the continuous monitoring and control of road conditions and Service Levels for all roads or road sections included in the contract. This will not only be necessary to fulfil the contract requirements, but it is an activity which will provide him with the information needed to be able (i) to know the degree of his own compliance with Service Level requirements, and (ii) to define and plan, in a timely fashion, all physical interventions required to ensure that service quality indicators never fall below the indicated thresholds. Under the OPRMC modality, the Contractor will not receive instructions from the Employer concerning the type and volume of road maintenance works to be carried out. Instead, all initiative rests with the Contractor who must do whatever is necessary and efficient to achieve the quality levels required. This concept is expected to lead not only to significant efficiency gains, as mentioned earlier, but also to technological innovation.

11. It is expected that in order to comply with the contract, the Contractor will most likely have to carry out different types of works, including some Initial Rectification activities and Periodic Maintenance works. The definition of the exact nature of the works, their timing, their costing and their implementation is left to the judgment of the Contractor. Note that a milestone exists to get the road to the desired standard. This means that his capacity must be
above the usual capacity of a traditional civil works contractor. In fact, an essential attribute is the capacity to manage road networks.

12. Some emergency works should always be foreseen. These are meant to remedy unexpected damage which occurs as a result of extraordinary natural phenomena, due to the reasons beyond control of contractor in maintenance of roads and which affect the normal use of the road network, or the safety and security of the users. For meeting the Emergency / day works a provisional sum is included in the contract. For emergency works, the contract limits the responsibility of the Contractor. Emergency works are remunerated by the Engineer in charge from the provisional sum for each work order established on the basis of executed quantities at the unit prices covered under work schedule 4 for similar items of work item and rate as per current SOR and new rates for other items shall be arrived as per clause 61 and 63 of General Conditions.

13. Bidders will present their financial offer for:
   - the **Ordinary Maintenance Services** in the form of the amount of the monthly lump-sum payment demanded by the bidder according to the conditions of contract (this will be the monthly amount applicable throughout the duration of the contract);
   - the **Initial Rectification Works**, in the form of a lump-sum amount, while indicating the quantities of measurable outputs to be executed in order that the road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the progress in the execution of those measured outputs;
   - the **Periodic Maintenance Works** (if so required in the Bid Data Sheet), in the form of a lump-sum amount, while indicating the quantities of measurable outputs to be executed in order that the road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the progress in the execution of those measured outputs;
   - the **Minor Improvement Works** (if so required and for the improvement indicated in the bidding documents) in the form of unit prices for outputs of each type of improvement works; payment for Minor Improvements will be made in accordance with quoted unit prices for those outputs.

A price adjustment clause applicable to all prices and activities in order to compensate for increases or decreases in cost indices are included.

14. The agreed monthly payment for Ordinary Maintenance works and services will be made to the Contractor if he has complied, during the month for which the payment is to be made, with the agreed Service Levels on the road network under contract. Together with his monthly invoice, the Contractor will report the result of his own evaluation of compliance with the required Service Levels, based on his own monitoring system which is mandatory. His statement will then be verified by the Employer or his representative through inspections. If the Service Levels are not met, payments are reduced, based on a schedule given in the contract. Payments may even be suspended, and the contract cancelled, if the contractor fails during an extended period to achieve certain minimum thresholds values of Service Levels.
The contract describes the formulas used to calculate payment reduction and potential contract suspensions.

A2 General

The Contractor shall implement an appropriate maintenance strategy, incorporating regular inspections, programming and work activities to:

i) Maintain public safety

ii) Maintain the roadway assets to the required performance Criteria

iii) Keep the road open to traffic

A3 Definitions

The following definitions shall apply:

(a) **Bridge**
   Any structure, being a bridge or culvert with a span or headwall length greater than 6 metres

(b) **Culvert**
   Any pipe, box (RCC) or slab having a diameter, span or headwall length less than 6 metres.

(c) **Critical Location**
   A location where the road alignment and/or pavement width and/or geometry are identified by additional markings or furniture to guide the travelling public (cars, trucks, motorcycles, bicycles, and pedestrians).

(d) **Defect**
   The visible or measurable evidence of failure or other undesirable condition

(e) **Emergency Works**
   Emergency Works is a set of necessary and sufficient activities to reinstate the Road and reconstruct its structure or right of way strip damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding and earthquakes and due to the reasons beyond the control of contractor. The need for execution of Emergency Works is jointly identified by the Employer and the Contractor and for starting of execution of Emergency Works the Employer shall issue a Work Order

(f) **Hazard**
   An event, condition or substance which has the potential to cause harm to the health and safety of persons, including the travelling public.

(g) **Initial Rectification Works**
   Additional works required in the initial stage of the Contract to allow the Contractor to bring the road up to the required Service Level Criteria.

(h) **Intervention Criteria**
   The condition level at which a defect is recorded and rectified within a given Response Time.

(i) **Memorandum**
A written instruction from the Employer or his representative confirming approval to do any work outside those activities included in the Lump Sum payment (i.e. Emergency /Day works, etc.) or for issuing notice of defects not maintained to the Response Time in the Lump Sum

(j) **Road Obstructions**
Any cardboard, paper, garbage, rubbish, wood, glass, metal, rubber, dirt, waste matter, or anything of a like nature, within the traffic lanes or shoulders, that is likely to cause damage to vehicles or otherwise be a hazard or visual detriment to the public.

(k) **Minor Improvement Works**
Minor Improvement Works consists of a set of interventions that add new characteristics to the Road in response to existing or new traffic, safety or other conditions, as defined in the Specifications.

(l) **Ordinary Maintenance**
The regular program of activities including inspections, repairs, works and associated reports designed to address public safety, limit the deterioration of infrastructure and sustain functional and environmental values.

(m) **Periodic Maintenance**
Periodic Maintenance Works are specific and clearly defined civil works the Contractor is required to carry out under the conditions of the Contract, as defined in the Specifications. Periodic Maintenance Works quantities were estimated by the Contractor to achieve the performance standards defined by the Service Levels and offered at a Lump-Sum price.

(n) **Response Time**
The maximum time to repair a defect, based on consideration of the defect type, risk and severity.

(o) **Road Number**
The identification number of the road as provided by the Employer (e.g. State Highway No 1, ).

(p) **Roadside**
Any non-pavement area within the road reserve, including any median area.

(q) **Rural Area**
All areas outside of urban areas

(r) **Safety Sign**
A road sign that provides the driver with advice about the safe use of a road.

(s) **Standard Job**
Description of work to restore and/or repair a damaged item to a defect-free condition. The list of Standard Jobs is detailed in Tables C4.1.1 – C4.7.1

(t) **Structure**
A bridge, culvert or sign gantry or other designated structure. The structure may have been assigned an asset structure number.

(u) **Unit of Work**
Base unit of measurement of a standard job (e.g. metre, square metre).
(v) **Urban Area**  
Those sections of road that are contained within the defined limits of Towns or Villages, or as otherwise specified.

(w) **Pavement**  
An artificial surface laid over ground to facilitate travel.

**A4 Scope of Services**

**A4.1 Scope of Services to be provided**

Notwithstanding the provisions of Clause 7 of the General Conditions, the services to be provided by the Contractor include all activities, physical or others, which the Contractor needs to carry out, in order to comply with the Service Levels and other output and performance criteria indicated under the contract, or with any other requirements of the contract. In particular, they include management tasks and physical works associated with the following road-related assets and items:

- Pavements (paved roads)
- Roadside longitudinal drainage systems
- Road shoulders
- Signage and road safety furniture
- Slopes (cuts and embankments)
- Structures and major culverts
- Traffic management
- Data Collection

The Limits of the Contractor’s maintenance work zone for each road within the Contract shall encompass the road reserve from property boundary to property boundary, including footways, parking and rest areas. It also includes the first 10m length of side road junctions, both directions of one way systems separated carriage ways and both intermediate and terminal roundabouts (if any), up to either the end of the splitter island or 50m from the circle centre for each contract road up to either the end of the splitter island or 50m from the circle centre.

The Contractor’s maintenance work zone shall exclude the maintenance of side drains located within Panchayat limits and Municipal Corporation limits.

**A4.2 Scope of Works to be provided**

The objective of the project is to undertake Ordinary Maintenance, Initial Rectification Works, Periodic Maintenance Work and Minor Improvement Works and Emergency Works on select roads totalling approximately ......Lane Kilometres in Road division ........... . The maintenance work will also include cross drainage works, minor work on bridges and roadside maintenance within the select road limits. The Ordinary Maintenance works will be carried out under performance based road maintenance on a lump sum basis paid monthly. Initial Rectification and Periodic Maintenance will be paid on measured quantity to the value of the Lump Sum and Minor Improvement Works will be paid on the basis of actual quantities of work completed. There is a requirement for specialized maintenance equipment and the contract obligation is for continuous input over a period of 5 years.
The project involves maintenance of the following roads under Road division .................

(i) ........................................
(ii) ........................................
(iii) ........................................
(iv) ........................................

The lane wise details are given below:

(i) Single lane : ...... Kms.
(ii) Intermediate lane : ...... Kms
(iii) Double Lane : ...... Kms
(iv) Multi Lane : ...... Kms.

The Contractor agency has to take up the following Components for the project for the periods specified.

1. Ordinary Maintenance - 60 Months
2. Initial Rectification - 6/9 Months
3. Periodic Maintenance - 48 Months
4. Minor Improvements - 12/24 Months
5. Emergency Works - 60 Months

Ordinary Maintenance:
The Contractor has to take up OM for a period 5 years (60 Months) for a length of ...... km as per OM specification specified in section V of Part C.

Initial Rectification:
This Component is to achieve the entire project to below intervention standards i.e., to the desired level within the specified period of 6/9 Months as per specification specified in the section V of Part D.

Periodic maintenance:
This is the Component where in the pavement resurfacing activities (Laying of Semi Dense Bitumenous Concrete, Construction of Earthen Shoulders, Providing Centre line marking & Edge line marking and Road Studs) are to be taken that are beyond Ordinary Maintenance Activities to meet the service level as per specification specified in section V of Part E. The executing agency has to apply the surface treatment over the entire road for a period of first 4 Years (48 Months).

Minor Improvements:
This Component is necessary at the initial stage of the project to meet the service level compliance and is as per specification specified in section V of Part F.
Emergency Works:
Provisional sum is included to meet the emergency situation. The works will be taken under this component whenever there is any unforeseen Natural Phenomena occurs and has to be attended during the entire project period as per the specification specified in Section V of Part G.

A5 Reference Information
As a general reference, the information shown below is provided to the Bidder. The Employer provides this information to the best of his knowledge, but does not guarantee its correctness, and the Contractor may not make any claim based on potential errors or omissions in the information provided.

Details for each road covers the data listed below and as included in detail in Appendix B of this Contract.

- Technical information of each road, such as inventory, as available
- Bridges and culverts
- Other information as available.

A6 Description of the project area
The project roads are under road division in the District of .....................under the control of the Executive Engineer, ..... .......... Road Division and are as shown on the map in Appendix A.

A7 Description of the Roads included in Contract
Contract packages are based on fixed areas within the specified Road division. Consequently, some roads may be under other works programs, from time to time throughout the contract period. The Contractor must be aware of his commitments and all roads under his control and those specifically requiring his attention. It will therefore be necessary for the Employer to provide a list of total roads within the fixed area divided into two groups of road sections; (1) immediate maintenance, and (2) other comprising roads programmed for other works programs.

To enable the Contractor to program his resources, and be able to program and budget for the taking over new roads from other programs and the transferring of road to other works, the expected dates for the start and completion of all works under other programs shall be provided by the Employer

(i) The road sections included in the initial contract are the following:

The work is located in the Road Division ----- district in the State of Bihar as shown in Appendix A and detailed in the Table below:
### (ii) The Sections of the roads to be excluded due to works completed by others.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the road</th>
<th>Reach taken up within the contract</th>
<th>Road Sections for which works are to be taken up by other agencies</th>
<th>Road Sections currently under Defect Liability Period (DLP) by other agencies</th>
<th>DLP</th>
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</thead>
<tbody>
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</table>

**Table:**

- **ROAD**
- **ROAD SECTION**
- **DISTRICT**
- **Km Stones**
- **Length**
- **Classification of Road**

<table>
<thead>
<tr>
<th>ROAD</th>
<th>ROAD SECTION</th>
<th>DISTRICT</th>
<th>Km Stones</th>
<th>Length</th>
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<tbody>
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</tr>
</tbody>
</table>
(iii) The Section of roads to be excluded due to works to be taken up/completed by other agencies.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the road</th>
<th>Reach</th>
<th>Name of work</th>
<th>Probable date of completion</th>
<th>DLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>......</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>......</td>
<td>-</td>
<td>-</td>
<td>......</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note:

1. Data given are indicative only, actual details to be confirmed by the Employer.

2. Sections identified under Defect Liability the Contractor is partial responsible for the Ordinary maintenance as defined in Clause C6.3 of the Technical Specifications.

3. Refer to Clause C6.3 of the Technical Specifications for Contractor’s responsibility for the maintenance of the road section prior to and after works (Periodical maintenance, Minor Improvements) are completed.

4. For the Road Sections defined above which are temporarily under full or partial responsibility of other agencies at various times in the Contract period, the Monthly Lump Sum shall be adjusted in accordance with Clause C6.4 of the Technical Specification.

A8 Self-Control Unit of Contractor

In conformity with sub-clause 25.2 of the GC, the Contractor is obliged to establish, within his own organizational structure, a specific Unit staffed with qualified personnel, whose task is to verify continuously the degree of compliance by the Contractor with the required Service Levels. The Self-Control Unit is also responsible for undertaking the quality control testing required for Initial Rectification Works, Periodical Maintenance Works, Minor Improvement Works and Emergency Works.

The Unit is responsible for the generation and presentation of the information needed by the Contractor for the documentation required for the Monthly Statement. In general terms, the Unit will be responsible to maintain at all times a detailed and complete knowledge of the condition of the roads or road sections included in the contract and to provide to the management of the Contractor all the information needed in order to efficiently manage and maintain the roads included in the contract. The Self-Control Unit is also obliged to carry out, in close collaboration with the Engineer in charge, the formal and scheduled inspections of Service Levels which will take place regularly.

The compliance (non-compliance) of the Contractor with service level requirements will be reported by the Self-Control Unit to the Employer in the form of tables as specified in A13.1.

A9 Specification of Service Level Criteria

The service level applicable is indicated relevant to activities in the tables C4.1.1 to C4.7.1, C5.2, E4, and F7.

A10 Functions of Key Personnel

This Contract has a requirement that a high level of engineering management is employed to oversee the programming, inspection and execution of works. The Contractor shall engage qualified personnel with required experience as specified in the Instructions to Bidders to
undertake such tasks. The minimum key positions to be provided within contractor’s staff and their functions.

<table>
<thead>
<tr>
<th>Key Positions</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Road Manager</td>
<td>Head the SCU and control compliance activities and reporting activities</td>
</tr>
<tr>
<td>2. Maintenance Engineer</td>
<td>Head the overall control and supervision of the day-to-day site activities</td>
</tr>
<tr>
<td>3. Works Supervisor (s)</td>
<td>One required to manage and control each specific component of the works, like Ordinary Maintenance Services, Initial Rectification Works, Periodic Maintenance operations, culvert installation, specialised repairs, etc.</td>
</tr>
</tbody>
</table>

“The Contractor shall designate either the Road Manager or the Maintenance Engineer as the Environmental Officer (EO) who is familiar with Environmental l aspects of Road Projects and will be responsible for the Environmental l Management”

A11 Methods of Inspection of Service Levels

A11.1 Formal Inspections of Service Levels

The Employer must inform the Contractor of his intention to carry out a formal inspection at least 48 hours in advance, indicating the exact date, hour and location where the formal inspection is to begin. The Contractor is obliged to be present at the date, hour and location specified by the Employer, providing the physical means needed for the inspection as indicated further below. The following minimum formal inspections should be undertaken by the Contractor in the presence of the Engineer in charge of all of the roads covered by the Contract as part of his responsibility to public safety and to enable him to schedule a monthly works Program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Inspection Type</th>
<th>Minimum Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Routine</td>
<td>Monthly</td>
</tr>
<tr>
<td>H</td>
<td>Hazard</td>
<td>Weekly</td>
</tr>
<tr>
<td>B</td>
<td>Bridge Culverts</td>
<td>6 monthly or immediately after flood event</td>
</tr>
<tr>
<td>N</td>
<td>Night</td>
<td>6 monthly</td>
</tr>
<tr>
<td>Code</td>
<td>Inspection Type</td>
<td>Minimum Frequency</td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>E</td>
<td>Emergency</td>
<td>Immediately on receiving information on notification.</td>
</tr>
</tbody>
</table>

A11.1.1 Ordinary Inspection

The main purpose of the Ordinary or Routine Inspection is a Conformance Inspection to enable the Employer to verify the information presented in the Contractor’s monthly statement and to issue the interim payment certificate. Routine Inspections will normally, but not necessarily, be scheduled to begin within less than five (5) days after the presentation by the Contractor of the Monthly Statement to the Employer and they should normally be completed within a maximum of three (3) days. The Routine Inspections allow the comparison of the information on compliance provided by the Contractor in the standard tables which are part of his Monthly Statement, with actual measurements taken in locations to be determined by the Employer. During the formal inspections, the Employer will prepare a brief Memorandum describing (i) the general circumstances of the site visit, including date, road sections visited, persons present, etc., (ii) any non-compliance which may have been detected, and (iii) the time granted by the Employer to the Contractor to remedy the detected defects. Based on the outcome of the formal inspection, the Employer will immediately correct any possible errors or misrepresentations in the Contractor’s Monthly Statement, countersign it and present it for payment, and to the Contractor for information.

Formal inspections will also be scheduled for the follow-up site visits, whose purpose is to verify if the Contractor has remedied the causes of earlier non-compliance, within the time frame granted by the Employer and specified in the Memorandum.

Ordinary (Routine) Inspection (R)

<table>
<thead>
<tr>
<th>defects to be identified</th>
<th>Inspection Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM100 Sealed pavement</td>
<td>Routine Inspections are undertaken by the Contractor on a monthly basis, jointly with the Employer or its representative. It involves detailed survey to note:</td>
</tr>
<tr>
<td>OM200 Shoulder</td>
<td>a) all defects that have reached Intervention Criteria</td>
</tr>
<tr>
<td>OM300 Drainage</td>
<td>b) Programmed work not completed in Response Time</td>
</tr>
<tr>
<td>OM400 Vegetation</td>
<td>Where necessary, inspections shall be carried out on foot. Where there is dispute on any defect, every attempt should be made to find resolution on-site.</td>
</tr>
<tr>
<td>OM500 Roadside furniture</td>
<td>The information collected shall be submitted in Form OM-01</td>
</tr>
<tr>
<td>OM600 Structures</td>
<td></td>
</tr>
<tr>
<td>OM700 Operational</td>
<td></td>
</tr>
<tr>
<td>servicing</td>
<td></td>
</tr>
</tbody>
</table>

A11.1.2 Hazard Inspection

The main reason for the Safety Inspection is to ensure that the pavement carriageway remains safe at all times and between Conformance Inspections and does not present a hazard to the
travelling public. This inspection should be undertaken weekly by driving through the road and cover all defects that are visibly:

- hazards that may impose a danger or safety to the road user and others; and
- defects that are of an offensive nature.

When determining if a defect is or likely to become a hazard the Contractor must consider, as a minimum:

- severity and nature of the defect;
- extent of the defect;
- general road condition and prevailing or expected weather conditions;
- location of the defect;
- effect on the road user; and
- volume of traffic

### Hazard Inspection (H)

<table>
<thead>
<tr>
<th>Defects to be identified</th>
<th>Inspection Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM101 Pothole patching</td>
<td>The hazard inspection will be undertaken on a weekly basis by an experienced officer of the Contractor and includes a rapid survey of the whole network to note all defects that are:</td>
</tr>
<tr>
<td>OM102 Regulation of wheel ruts and depressions</td>
<td>a) hazards that impose an immediate danger or compromise safety to the road user and others;</td>
</tr>
<tr>
<td>OM105 Pavement cleaning</td>
<td>b) defects that are of an offensive nature; and</td>
</tr>
<tr>
<td>OM201 Unsealed shoulder</td>
<td>c) defects as indicated by Inspection Type “H”</td>
</tr>
<tr>
<td>OM203 Embankment and Batter Repairs</td>
<td>When determining if a defect is an immediate safety hazard the Contractor must consider:</td>
</tr>
<tr>
<td>OM301 Surface drainage</td>
<td>a) severity and nature of the defect;</td>
</tr>
<tr>
<td>OM302 Underground drainage, culverts and underpasses</td>
<td>b) extent of the defect;</td>
</tr>
<tr>
<td>OM303 Culvert and pit repair</td>
<td>c) general road condition and prevailing or expected weather conditions</td>
</tr>
<tr>
<td>OM402 Tree and shrub management</td>
<td>d) location of the defect</td>
</tr>
<tr>
<td>OM502 Guard stones</td>
<td>e) effect on the road user</td>
</tr>
<tr>
<td></td>
<td>f) volume of traffic</td>
</tr>
<tr>
<td></td>
<td>Inspections at pedestrian underpasses shall be visually undertaken on-foot.</td>
</tr>
<tr>
<td></td>
<td>The information collected shall be submitted in Form OM-02</td>
</tr>
</tbody>
</table>

### A11.1.3 Bridge and Culvert Inspections

The reason for bridge and major culvert inspections is to ensure that the Contractors are undertaking the required care of bridges and culverts, other than those easily seen during the monthly Conformance Inspection. Generally detailed bridge inspections are not considered necessary as part of the Conformance Inspection as they are slow and time consuming but
should be undertaken at least six monthly or after any major flood. Items requiring inspection are all defect that may affect the structural integrity of the structure including joints, superficial damage, batter protection and stream scour.

**Bridge and Major Culvert Inspection (B)**

<table>
<thead>
<tr>
<th>Defects to be identified</th>
<th>Inspection Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM303 Culvert and pit repair</td>
<td>Bridge and Culvert Inspections are to be carried out by an experienced officer of the Contractor initially within 3 months of Start Date and then on a regular 6-monthly basis or immediately after flooding. To include detailed visual inspections of all bridges and culvert structures for all structural defects, superficial damage, batter defects and stream scour. The information collected shall be submitted in Form OM-03</td>
</tr>
<tr>
<td>OM600 Structures</td>
<td></td>
</tr>
</tbody>
</table>

**A11.1.4 Night Inspection**

The reason for Night Inspections is to ensure that while driving at night the road is safe and signs easily visible. It will also provide the Contractor and the Employer with a different view of the road under night time driving conditions that may highlight deficiencies that are not clearly visible during daylight hours. Conducted 6 monthly, then Night Inspection to identify defective/non reflective or missing, signs, delineators, guideposts, hazard markers, pavement markings and any potential hazards to the travelling public at night.

The speed should be kept to a level that allows the condition of the listed assets to be observed clearly and serviceability easily assessed and recorded.

**Night Inspection (N)**

<table>
<thead>
<tr>
<th>Defects to be identified</th>
<th>Inspection Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM501 Sign maintenance</td>
<td>Night Inspections are to be carried out by an experienced officer of the Contractor on a 6-monthly basis by driving all roads in each direction and to cover Standard Jobs as indicated by Inspection Type “N”</td>
</tr>
<tr>
<td>OM503 Guideposts, delineators and painted trees</td>
<td>The speed should be kept to a level that allows the condition of the listed assets to be observed clearly</td>
</tr>
<tr>
<td></td>
<td>The information collected shall be submitted in Form OM-04</td>
</tr>
</tbody>
</table>

**A11.1.5 Emergency Inspection**

Following notice by the Employer.

**Emergency Inspection (E)**
Defects to be identified | Inspection Requirements
---|---
OM105 Pavement cleaning | Emergency Inspections are to be undertaken by the Contractor immediately when notice is given, by the Employer including:
OM302 Culvert and pit cleaning and stormwater drains | a) callouts to road safety/traffic emergencies
OM303 Culvert and pit repair | b) observation of a drainage structure, bridges and surface drains during and after heavy rainfall or floods;
OM304 Stream maintenance | c) observation of safety barriers and road surface is safe after a road accident; and
OM600 Structures | d) landslip sites if any.
OM700 Operational Servicing | The site is to be immediately made safe, an estimate of equipment and materials required for re-establishing (temporarily) the facility, and the Employer notified.
The information collected shall be submitted in Form OM-05

A11.2 Informal Inspections of Service Levels

The Employer may carry out informal inspections of Service Levels as part of his duty. He may do so on his own initiative, at any time and anywhere on the roads included in the contract. He must use his own means for those inspections. If he detects any road sections where the Service Level criteria are not met, he is obliged to inform the Contractor within 24 hours in writing, in order to enable the Contractor to take remedial action as soon as possible. The results of informal inspections may not be used by the Employer for purposes of correcting the Contractor’s monthly statements or applying penalties or liquidated damages, except for cases in which the road has been completely interrupted and the criteria of Road Usability has not been met.

A12 Contractor Supplied Equipment

A12.1 Communications Equipment

In accordance with sub-clause 5.3 of the GC, the Contractor is obliged to provide and maintain permanently operated communications equipment as listed below:

- cellular phones (including 3 for Employer and his representatives)

A13 Specification for the Provision of Road Management Information

The following criteria will be applied to all the deliverables required for the ongoing management of the contract and the road network.

A13.1 Monthly Site Meeting and Monthly Report

Employer and Contractor shall formally meet on a monthly basis to discuss work progress, claims, and general business. Minutes will be taken at these meetings, and any noted actions held accountable at subsequent meetings.
The Regional Monsoon occurs during the period 1st June to 30th September of each year. The formal meetings shall be held on a fortnightly basis during this period. In the event of excessive rain the formal meeting shall be held at shorter interval on the notice of employer.

Prior to the meeting the Contractor will submit a report consisting of the following elements

A13.1.1 Monthly Statement
The Monthly Statement to be submitted in accordance with sub-clause 49.1 of the General Conditions shall have the formats as shown in the following pages.

The compliance (or non-compliance) of the Contractor will be reported by the Self-control Unit to the Employer in the form of tables for which a mandatory standard format is adopted. There is one table for each road or road section. The tables are part of the Contractor’s monthly statement, and they may be complemented by comments for which a specific format is not required. The format of the mandatory standard table is as shown on the pages after the Monthly Statement formats.

A13.1.2 Monthly Works Program
The Contractor shall prepare a Monthly Works Program in Form OM 06 for the following month incorporating:

a) Items identified during Ordinary/Other Inspections
b) Items identified during Inspections carried out under the Contract Quality Plan
c) Initial Rectification Work Items, Periodic Maintenance Work Items and Minor Improvement Works (Schedules; 2, 3 and 4) as approved by the Employer. Any items not completed from the previous month’s program.

Where asset items are not repaired within the Response Time period, the Employer may deduct payment for those items as per Clauses C6 and C7.

A13.1.3 Monthly Progress
The Contractor shall collect and record information regarding the quantity and the approximate cost of completed work under the headings of the Tables in Part C of the Technical Specification. Sample ‘Monthly Progress Report (Form OM07)’ details the information required. The report is to be submitted by the 15th day of the next month after the Monthly Works Program.

A13.1.4 Previous Monthly Minutes
The Contractor is to include the previous monthly minutes detailing actions that have been carried out since the conduct of the meeting.
### STANDARD FORMAT FOR PAVED ROADS MONTHLY STATEMENT

<table>
<thead>
<tr>
<th>Monthly Statement for Contract No.</th>
<th>Contract Name:</th>
<th>Contract Month No.: ____</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length of Road in Contract (Km)</td>
<td></td>
<td>Period: ________________ (month)</td>
</tr>
<tr>
<td>Length of road excluded (km)</td>
<td>Monthly Payment, 1/60 of Ordinary Maintenance Services L/S (Schedule 1 Item 1)</td>
<td></td>
</tr>
<tr>
<td>Length of road to meet required service level (km) (1)</td>
<td>______________________ (Rs) (4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service Level Criteria</th>
<th>Compliance criteria</th>
<th>Non-compliance</th>
<th>Payment Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Length non-compliant (2)</td>
<td>% Payment reduction (3)</td>
</tr>
</tbody>
</table>

#### 1. Road User Service and Comfort
- Potholes Patching (18%)
- Surface Depressions & Ruts (6%)
- Crack Sealing (2%)
- Surface Treatment (1%)
- Pavement Sweeping (2%)
- Edge Repairs (10%)
- Digout Repairs (15%)
- Repairs of Concrete Pavement (1%)
- Unsealed Shoulder Repairs (8%)
- Unsealed Shoulder Power Grading (3%)
- Embankment and Batter repairs (1%)
- Surface drains Cleaning (2%)
- Pipe, Culverts and Pits Cleaning (4%)
- Pipe, Culvert and Pits Repairs (3%)
<table>
<thead>
<tr>
<th>Service Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>River/Stream Maintenance</td>
<td>2%</td>
</tr>
<tr>
<td>Grass Control, Clearing and Grubbing</td>
<td>2%</td>
</tr>
<tr>
<td>Tree and Shrub Management/ horticulture management</td>
<td>2%</td>
</tr>
<tr>
<td>Sign Maintenance</td>
<td>2%</td>
</tr>
<tr>
<td>Guardstone/Guardrail Maintenance</td>
<td>2%</td>
</tr>
<tr>
<td>Distance Stones, guidepost delineators etc</td>
<td>2%</td>
</tr>
<tr>
<td>Footways</td>
<td>1%</td>
</tr>
<tr>
<td>Roadmarking and Cats Eyes</td>
<td>1%</td>
</tr>
<tr>
<td>Bridge and Major Culvert Maintenance</td>
<td>3%</td>
</tr>
<tr>
<td>Minor Landslip clearing</td>
<td>1%</td>
</tr>
<tr>
<td>Emergency Works and Services</td>
<td>4%</td>
</tr>
<tr>
<td>Vandalism Repair</td>
<td>1%</td>
</tr>
<tr>
<td>Litter control &amp; Road obstructions / removal of dead animal</td>
<td>1%</td>
</tr>
<tr>
<td><strong>SUB TOTAL</strong></td>
<td><strong>(5)</strong></td>
</tr>
</tbody>
</table>
PAYMENT DEDUCTION SUMMARY FOR CONTRACT

Payment Summary – Contract No. ________ / _____ for Month of ______________ 201_  

Road Number (s) ________________________________ Contract month: ___ of ____ (contract period)

<table>
<thead>
<tr>
<th>Service Level Criteria</th>
<th>Compliance criteria</th>
<th>Payment Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. incidents/ Days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>Payment reduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>1. Road User Service and Comfort</td>
<td>Defined in previous table</td>
<td>from previous table (5)</td>
</tr>
<tr>
<td>2. Road Usability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Management</td>
<td>Failure to provide Patrol Maintenance Unit (PMU)</td>
<td>Rs 1,000/day</td>
</tr>
<tr>
<td></td>
<td>Failure to complete and Submit Inspections and reports (Initial/Milestone/Completion/Monthly)</td>
<td>Rs 2,000/day</td>
</tr>
<tr>
<td></td>
<td>Failure to submit Program of performance (contract Plan)</td>
<td>Rs 1,000/wk</td>
</tr>
<tr>
<td></td>
<td>Failure to comply to various requirements (quality/environment/Traffic Management/Emergency) (See Cl. C7(iii))</td>
<td>Rs 3,000/event</td>
</tr>
</tbody>
</table>

TOTAL DEDUCTION

Note: the above total deduction amount will be deducted from the Monthly Ordinary Maintenance Lump Sum. The total Monthly calculated deduction shall not exceed monthly ordinary maintenance lump sum for any individual monthly payment in accordance with Clause 51.1 of the Particular Conditions. For the initial rectification period milestone period there shall be no deduction under item 1 (Road User Comfort).
STANDARD REPORTING TABLE FOR COMPLIANCE WITH SERVICE LEVELS

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ROAD USER COMFORT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROAD</td>
</tr>
<tr>
<td></td>
<td>Road</td>
</tr>
<tr>
<td></td>
<td>[specify]</td>
</tr>
</tbody>
</table>

**Usability of the Road:** complied with or not complied with.  
**Traffic Speed:** complied with or not complied with; average speed was .... ....km/h

Prepared by Contractor’s Self-Control Unit 

Certified by Employer or his agent

[Signature]
A13.2 Milestone Reporting Requirements

A13.2.1 Initial Road Condition Report

Within 30 days of signing the Contract, the Contractor’s Road Manager shall submit the ‘Initial Road Condition Report’ to the Engineer in charge. The Report shall consist of the following components:

- Initial Condition Survey
- a Video graphic Survey
- Roughness Results
- Environmental & Safety survey

The Initial Condition Survey is to establish a visual baseline of road condition at the time of commencement of the works. The purpose of this Initial Condition Survey is to confirm and record:

(a) Those asset features that require Ordinary Maintenance (OM) activities to return the asset to below Intervention Criteria. The Contractor is deemed to have made full allowance for this work in his Lump Sum tender and no additional payment will be made to bring such works back to intervention standard.

(b) Those sections of road where the defect is of a considerable size, inappropriate for an Ordinary Maintenance repair, and that require the more intensive treatments that are to be programmed in Initial Rectification, Periodic Maintenance in addition to the identified Minor Improvement Sections.

(c) Those sections of road that are currently programmed for reconstruction by others. Work on these sections of road does not require action on Intervention Criteria and is entered into Clause A7 (ii) in relation to pavement deficiencies. The Contractor is to keep the pavement surface safe and hazard-free under the provisions of the Lump Sum.

The Contractors Road Manager and the Employer or their Nominated Representative’s shall carry out a joint ‘Initial Condition Survey’ of the roads and bridges, and shall submit it to the Employer. Details of the Initial Condition Survey shall be recorded on Form OM 10 as provided at Appendix C.

The Videographic Survey of all the roads within the Contract is to be completed in accordance with the Terms of Reference for the Videographic Survey as provided in Appendix E. The video survey will be taken during daylight hours from the passenger’s seat of slow moving vehicle with the camera aligned towards the centre of the road. Video shall also be taken of all bridges and major culverts to show the aspects of each structure from all angles. The contractor will complete and formally transmit to the Employer 2 copies of the video within 15 days after the notice to commence.

The Roughness data is required to establish the actual roughness position of each paved road at the time of commencement of the works. Roughness will be measured using the methodologies
as covered in Clause E5. The contractor will complete and formally transmit to the Employer the results of the surveys within 21 days, after start date.

The Environmental and Safety survey is to establish the pre-existing issues so the Contractor will not be penalised for breaches of these requirements committed by others prior to the commencement of work.

The Employer will confirm Initial Condition Survey within 21 days. The Employer’s ruling on the condition of any item feature will be final.

**A13.2.2 Milestone 1 Report**

Within 30 days of meeting the Contract Initial Rectification Milestone, the Contractors Road Manager shall submit the ‘Milestone 1 Road Condition Report’ to the Employer. The Report shall consist of a Condition Survey. The Milestone Condition Survey is to confirm that road condition at the time of the Milestone meets the defined Performance Levels. The Employer will confirm Milestone Condition Survey within 30 days. The Employer’s ruling on the condition of any item feature will be final.

**A13.2.3 Milestone 2 Reports**

Within 30 days of meeting the Contract Minor Improvement Work Milestone and Periodic Maintenance, the Contractor’s Road Manager shall submit the ‘Milestone 2 Road Condition Report’ to the Employer. The Report shall consist of the following components:

- Condition Survey
- a Videographic Survey
- Roughness Results

The Milestone Condition Survey is to confirm that road condition at the time of the Milestone meets the defined Performance Levels. The Employer will confirm Milestone Condition Survey within 30 days. The Employer’s ruling on the condition of any item feature will be final.

**A13.2.4 Milestone 3 and 4 Reports**

Within 30 days of meeting the Completion of years 2 and 3 of the Contract, the Contractors Road Manager shall submit the ‘Milestone Road Condition Report’ to the Employer. The Report shall consist of the Condition Survey and Roughness Results

The Milestone Condition Survey is to confirm that road condition at the time of the Milestone meets the defined Performance Levels. The Employer will confirm Milestone Condition Survey within 30 days. The Employer’s ruling on the condition of any item feature will be final.
A13.2.5 Milestone 5 (Handover) Report

Prior to 6 months of the Completion of the Contract, the Road Manager and Employer shall conduct a Contract Completion Condition Survey of the whole site and the Contractor shall prepare a *Handover Report*. The purpose of the Handover Report is to provide a smooth transition to the next contract and ensure that the next contractor is aware of any outstanding issues. The Report will:

(a) Summarize any unresolved issues;
(b) Include the most recent complete set of data on the roads covered by the contract, and
(c) Provide the following details;
   (i) A schedule of outstanding defects and liabilities,
   (ii) Any unresolved issues, especially those that may impact on the next Contractor,
   (iii) Details of any sensitive issues,
   (iv) Any ongoing special monitoring/maintenance needs.

Where Standard Job activities are identified outside the specified Intervention Criteria, the Employer may:

(i) Direct the Contractor to bring the deficient items to within the specified intervention standard within a designated, or
(ii) Arrange for the rectification of those features by others and in this event a deduction will be made to the Contract Sum payments due for the full cost of such works.

Contractor is encouraged to update on pre-existing issues identified in the Initial Environmental Survey through the use of the Contractor’s Environmental Checklist as per Appendix-F.1

The Employer will provide a written record of the Contract Completion Condition Survey to the Contractor within 14 days of the completion of the survey. The Employer’s ruling on the condition of any item will be final.

A13.3 Updating of Road Administration Databases

The Employer requires data about the assets being maintained under this contract for future reference. The Contractor shall supply all information necessary and maintain this data in a condition of accuracy, currency and completeness appropriate for future use which the data is intended. The following data is to be collected and updated:

- Road and bridge inventory and treatment history
- Road condition and section rating
- Road roughness
• Traffic and classification details
• Schedule of unit rate analysis for standard maintenance works

The contractor shall be responsible to undertake detailed road condition survey to enable the Employer to review the annual Periodic Maintenance requirements and develop to prepare suitable new procurement documents for award of the next contract. Therefore, it will be necessary to program this survey as a requirement under this contract and have information remitted to the Employer as detailed in Clause A13.2.

The Contractor shall provide hard and/or electronic copies of the information to the Employer as reasonably requested.

The Contractor shall make available all the records maintained by the Contractor in relation to The Works for inspection by the Employer at any time.

The delivery times and updating frequencies shall be within 15 days after the completion of each Initial Rectification, Periodic Maintenance or Minor Improvement works or at least quarterly intervals from start date.

Information provided to Employer on this Contract by the Contractor will be used for the purposes of monitoring and reporting road asset condition. The information remains the property of Employer and may be used to provide information to tenders on subsequent contracts.

A14 Program of Performance (Contract Plan)

In accordance with clause 17.2 of the General Conditions (GC), the Contractor shall submit a Program of Performance within twenty-eight (28) days after the signing the contract agreement. The program shall include, but not be limited, to the following items:

A14.1 Contractor’s Quality Assurance Plan

The purpose of the Contractor’s Quality Assurance Plan is to integrate the requirements of the contract and the Contractor’s quality assurance systems to deliver the Services.

The Contractor’s Quality Assurance Plan describes the methods and procedures which the Contractor will apply for the execution of the Contract, including how the contractor will:

(a) identify the quality requirements specific to the contract,
(b) plan and execute the work to satisfy those requirements
(c) inspect and/or test the work to ensure compliance with the quality requirements
(d) ensure strict document control and structured filing of contract administration documents
(e) record and monitor the results as evidence of compliance
(f) monitor the material supply and delivery processes;
(g) ensure the ability to trace materials incorporated in the works;
(h) undertake testing and measurement requirements;
(i) provide evidence of testing apparatus being recently calibrated;
(j) undertake internal audits;
(k) provide staff training;
(l) demonstrate manufacturer’s specification confirming compliance of materials;
(m) record of required testing, measurement and design sheets;
(n) document all non-conformances; and
(o) ensure that prompt action is taken to correct non-compliance.

The Contractor’s Quality Assurance Plan must clearly describe the systems, procedures and methods that will be used to deliver and monitor compliance of the Services.

The plan is to be sighted and agreed by the Engineer in charge within 8 weeks of the commencement of the contract. If a modified Contract Quality Plan is not presented by the Contractor within 8 weeks, the sample ‘Draft Quality Plan’, issued with the Bidding Documents, shall be the approved Contract Quality Plan until other modifications to work practices and responsibilities are presented by the Contractor and approved by the Employer. A non-refundable weekly penalty of Rs 1,000 shall apply until the Plan is presented.

The Contractor shall carry out all works in accordance with the approved Contract Quality Plan. This Quality Control plan shall comply with the requirements of Section 900 of the MoRTH Specifications with respect to testing frequencies and specified tolerances where applicable. The practices and performances of the Contractor will be observed and audited against the agreed Plan.

The Contractor shall establish a qualified engineer within his own organizational structure whose task is to verify continuously the degree of compliance by the Contractor with the required Response Codes. That contractor’s engineer will also be responsible for the generation and presentation of the information needed by the Contractor for the Maintenance Program Compliance Sheet (OM08 in Appendix C). It will require a system that is able to document a detailed and complete knowledge of the condition of the network and to program the management and maintenance requirements. The Contractor’s Maintenance Engineer is also obliged to carry out, in close collaboration with the Employer or his representative, the regular quality inspections of the contracted network.

The Employer shall instruct the Contractor to revise and or resubmit this Quality Plan if amendments are required for the Quality Plan to be deemed suitable for the Contract. The Contractor shall give every assistance to the Employer in carrying out any document and/or field audits that the Employer may require.

The compliance (or non-compliance) of the Contractor in achieving the Response Time for Ordinary Maintenance will be reported monthly by the Contractor to the Employer in the form of the Maintenance Program Compliance Sheet. The sheets form part of the Contractor’s monthly invoice, and shall be submitted with the Monthly Works Program (OM06). Where there is a noted non-compliance, the Non-Conformance Report (OM09) should be similarly submitted stating reasons. As non-compliance may result in a payment penalty, so it would be in the Contractor’s
best interests to fully explain the reason for not achieving the ‘Response Time’. These sheets form the basis of any dispute and will be periodically audited by the Employer against the Contractor’s monthly program.

**A sample quality plan is offered as part of the bidding documents. This plan will serve as a temporary quality plan until the Contractor submits his own details. An electronic copy will be forwarded to the successful bidder.**

### A14.2 Health and Safety Management Plans

If required in the Particular Conditions of Contract (PC) the Program of Performance shall include a Health and Safety Management Plan.

The purpose of the Health and Safety Management Plan is to foster a responsible attitude towards occupational health and safety and to comply with the provisions of the relevant act/regulations detailed in Section V part H.

Because of the nature of the Services, the Contractor may occasionally be exposed to hazardous situations which could involve risk of various degrees of harm, to the contracting staff and/or the public.

Situations will arise when it is not practical to eliminate or isolate significant hazards. In these situations the hazards must be minimized by ensuring planned protection systems (e.g. equipment, clothing) are actually used.

The Health and Safety Management Plan must be complied with by the Contractor’s personnel and all subcontractors at all times.

The Health and Safety Management Plan shall, when implemented in accordance with the plan requirements:

1. **Ensure the systematic identification of existing and new hazards on the work site(s)**
2. **Ensure the minimization of significant hazards, where elimination and isolation are both impractical**
3. **Ensure the provision and use of appropriate protective measures**
4. **Include emergency procedures for dealing with accidental spillage, pollution or imminent danger**
5. **Ensure regular review and assessment of each hazard identified and monitor employees exposure to these hazards.**
6. **Ensure reporting and recording of work site safety incidents so health and safety problems can be addressed quickly and regularly. It is a requirement of this Contract that any such incident be advised promptly to the Employer.**
7. **The Delivery Time for the initial Health and Safety Program shall be not later than 21 days after the Start Date.**
A14.3 Emergency Procedures and Contingency Plan

The Program of Performance shall include an Emergency Procedures and Contingency Plan which shall establish the roles, practices and procedures during specific types of emergency events identified in the plans and contingency plans associated with the closure of roads. The Emergency Procedures and Contingency Plan must be developed by the Contractor and agreed with the Employer and any other stakeholders the Employer may identify.

The purpose of the Emergency Procedures and Contingency Plan is to ensure the safety of the contractor’s personnel and road users in the case of emergency and/or road closure. It should include:

- an effective communication and event recording system
- the name, contact number and specific duties of the contractor’s personnel nominated to respond to an emergency event
- the contact number of other parties who need to be notified in cases of emergency events, e.g. police
- detailed response procedures for all emergency events
- possible detour routes in the event of road closure

The Delivery Time for the initial Emergency Procedures and Contingency Plan shall be not later than 21 days after the Start Date.

The contact for Emergency Calls will be the RCD Executive Engineer and Contractor’s Maintenance Engineer.

A14.4 Traffic Management Plan

The Program of Performance shall include a Traffic Management Plan. The Traffic Management Plan establishes the practices for traffic management at work sites. The Traffic Management Plan must be developed by the Contractor and agreed with the Employer. The Contractor shall effectively implement all traffic management requirements in accordance with MoRTH Clause 112 and Clause B7 of the Technical Specifications in respect of all works under the Contract.

The objectives of the Traffic Management Plan are to:

(a) clearly define and document the responsibilities and chain of command for the development, implementation and management of traffic control measures and systems
(b) establish the minimum requirements for temporary traffic control
(c) establish the minimum geometric, cross section and surfacing standards for temporary works
(d) provide appropriate transitions and enable safe and efficient traffic flow into, through and out of work sites
(e) protect the Contractor’s personnel at all times
(f) protect the Assets and the Contractor’s resources at all times.

(g) meet the operational requirements for the road

The Traffic Management Plan must include at least the following:

- A documented process for preparation, review and approval of the Traffic Management Plan
- A document tracking and control system to ensure that only the latest operative copy of the Traffic Management Plan is in circulation
- Contact details for Contractor, Principal, emergency services and other stakeholders
- Layout diagrams, method statements etc for implementation of traffic control while undertaking each aspect of the Services (including site specific layout diagrams and method statements if the Services require traffic control measures not covered by standard codes of practice)

The Delivery Time for the initial Traffic Management Plan shall be not later than 21 days after the Start Date.

**A14.5 Environmental Management Plan**

The Program of Performance shall include an Environmental Management Plan. The plan shall address but not be limited to the Environmental issues defined in Section V Part H “Environmental and Social Requirements.”
Section V, Part B
General Specifications

Part B General Specifications
1. General
2. Reference to MoRTH Specification
3. Special Clauses to Specifications
4. Amendments to Specifications
5. Amendment to Material Specifications
6. Testing of Material & Works

B.1 GENERAL
Not withstanding the provisions of Clause 24 and 30 of the General Conditions, the works and the materials used by the Contractor shall comply with or exceed the requirements relevant sections of the Ministry of Road Transport and Highways (MoRTH) Specifications for Road and Bridge Works (4th Revision 2001, published by IRC) and these General Technical Specifications shall form part of the Contract. Amendments to these MoRTH specifications applicable to this Contract are detailed in this Section.

B.2 REFERENCE TO MoRTH SPECIFICATION
All relevant clauses of MoRTH, except to the extent modified in this document shall apply to this contract.

B3 Special Clauses to Specifications
Additional clauses to the MoRTH Specifications for Road and Bridge Works (4th Revision 2001, published by IRC), Section 3000 for Ordinary Maintenance Activities.

(i) Potholes – General
All potholes are to be prepared as specified in Clause 3004 amended as follows:

The area to be patched/repaired shall be located by the Contractor. They shall be cut/trimmed with a jack hammer. The edges shall be cut vertically up to the level where the lower layer is suitable without any loose material. The areas shall be thoroughly cleaned with compressed air to remove all dust and lose particles. The excavations shall then be filled with material as mentioned hereunder in layers not exceeding 75mm, painting the sides and bottom of any existing bituminous layer with a thin layer of hot straight run bitumen or emulsion. Each layer shall be compacted with approved mechanical tampers/vibratory roller and the top layer shall be flush with existing bituminous surface (no “skin patches” are allowable). All loose and/or surplus materials on the surface shall be removed.

(ii) Deep Potholes (Depth extends beyond bituminous layer into the granular base course).

The area to be repaired shall be excavated and prepared as described in item (i) above.
The excavation shall be filled up with base course material Grading No 3 (Table MoRTH 400-7) with screening (as per Clause 404.2) each layer not exceeding 75mm in thickness duly compacted up to the existing crust thickness less 25mm. A thin layer of hot straight run bitumen or bitumen emulsion shall be applied as per MoRTH Clause 502 and 503 over the top of the horizontal surface of repaired pothole and the vertical sides. The top 25mm portion above the repaired pothole shall be filled up by an emulsified bitumen mix compatible with the existing layer or as approved by the Engineer-in-charge and duly compacted.

(iii) Shallow Potholes (Depth limited to the extent of thickness of existing bituminous pavement).

The area to be repaired shall be excavated and prepared as described in item (i) above.

A thin layer of hot straight run bitumen or bitumen emulsion shall be applied as per MoRTH Clause 502 and 503 over the top of the horizontal surface of repaired pothole and the vertical sides. The excavation shall be filled up with an emulsified bitumen mix compatible with the existing layer or as approved by the Employer in layers not exceeding 75mm in thickness duly compacted. The finished surface of repaired pothole shall be up to top of existing bituminous pavement, and left slightly proud (up to 5mm) following compaction.

B4 Amendments to Specifications

Details of Initial Rectification Work Items, Periodic Maintenance and Minor Improvement Works are detailed below:

INITIAL RECTIFICATION

Item No:2.1

(a) Providing Tack Coat with Bitumen Emulsion

Specification MoRTH clause 503, Tack Coat shall be applied clean and prepared surface with 80/100 grade Bitumen or Emulsion @ rate of 0.20 kg per sqm uniformly distributed using hand spray gun or pressure dissipater for areas >100 sqm at one location.

(b & c) Supply and placing BM & SDBC

Applicable for areas > 25m²

Specification - MoRTH Clause 504, 508 (Grading 2)

BM & SDBC layer with 60/70 GRADE BITUMEN/ VG 30 shall be used to carry different areas of pavement repairs. The Bituminous may be hand manual or paver laid and including compaction. The percentage weight of Bitumen of total mix is 3.3% for BM and 4.5-5.0 % for SDBC.
Where the section of the road being repaired is scheduled under PM works for a bituminous overlay, all regulation works shall be completed a minimum of 1 month prior to the execution of any SDBC bituminous overlay.

(d) Repair of Minor Digouts and Failed Sections
Applicable for areas > 5m$^2$

Specification – Section B3, MoRTH Clause 406, 503, 504, 508, 304, and 305.4.3

Minor dig-outs and failed sections are to be treated in accordance with Section B3 of this specification. The depth of all digouts shall be a minimum 200mm and all excavated material shall be removed from the site. Where full depth excavation is required, the limit of excavation shall be 25mm below the existing subgrade level.

Work shall include the supply, placement and compaction of Base coarse material and the construction of a surfacing layer of 25mm SDBC, including tack coat.

(e) Light Surface Sealing
Applicable for areas > 50m$^2$ in single isolated area or where exceeds 10% of pavement area in a Hectometre concern.

Specification – as directed by Engineer-in-charge.

A light seal of bitumen emulsion and 7mm aggregate shall be applied to areas of badly cracked pavement, provided the pavement is sound.

Where the section of the road being repaired is scheduled under PM works for a bituminous overlay, all crack repair works shall be completed a minimum of 1 month prior to the execution of any SDBC bituminous overlay.

(f) Slurry Seal
Applicable for areas > 50m$^2$

Specification – as directed by Engineer-in-charge.

A premixed bitumen emulsion and coarse sand (3mm), raked and compacted, shall be applied to seal cracks, fill voids, minor depressions and distressed seal, provided the pavement is sound.

Where the section of the road being repaired is scheduled under Initial Rectification, Periodic Maintenance or Minor Improvement works for a bituminous overlay, all slurry sealing works shall be completed a minimum of 1 month prior to the execution of any SDBC bituminous overlay.

(g) Edge Repair with edge break > 100mm in width
Applicable for lengths > 20m at any one location
Specification - MoRTH Clause 503, 501, 504 and 407

Repair major edge breaks up to 450mm in nominal width, with size 10mm bitumen premix to maintain the nominal seal width. Works shall include the supply and compaction of granular shoulder material against the repaired edge for support to a nominal width of 0.5m.

(h) Any additional activity necessary to achieve the service level objectives.

**Item No: 2.2**

(a) **Material for roadside repairs** - / 

Specification - MoRTH Clause 407

Construct Gravel shoulders as per MoRT&H Specification 401 & 407 for road side repairs as directed by the Engineer-in-charge.

(b) **Removal of Land Slip Material/Debris/unsuitable material** Applicable for volume > 5m$^3$ at any one location

(c) **Earth work excavation in all soils**

Specification - MoRTH Clause 304

Excavation shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Employer or delegated representative

Where directed by the Engineer-in-Charge under Emergency Works, material from major land slips/Debris/unsuitable material shall be removed and carted to a spoil site approved by the Engineer-in-Charge. Work shall include clearing all debris and material from the site, loading, cartage to spoil and disposal.

**Item No: 2.3**

**Clearing and Grubbing Scrub/Light Jungle/Heavy Jungle**

Applicable at jungle prevailing areas within 5 m width from pavement edge and at all curves where minimum sight distance is obstructed.

Specification – as directed by Engineer-in-charge

The Jungle shall be cleared and the roots shall be uprooted as per specification and such cleared jungle shall be burned to ashes.

**Item No: 2.4**
(g&h) CC of different grades

MoRT&H Section No. 1500,1700,2100,2200

Laying of Concrete shall be done as directed by the Engineer-in-charge.

(a to f & j) Plastering, Pointing, Random Rubble works, Grouted Pitching, , painting and white washing

Specification - MoRTH Clause 1300, 1400, 2200 & 2504

Construction and application of pointing, revetment, CRS works and white washing as directed by Engineer-in-charge.

**Item No:2.5**

Sign boards, KM stone, and Guard /Guide/Boundary pillar

MoRTH Specification (Suggestive) 801, 804 and 806

Providing and fixing of road studs, sign boards, KM stone, HM stone and Guard, Guide, Boundary pillar on the road as directed by Engineer-in-charge.

**Item No:2.6**

(a) Thermoplastic road marking –

MoRTH Specification No.803

Providing and applying thermoplastic road marking paint on the pavement surface as directed by Engineer-in-Charge.

(b) Fixing Sign boards, KM stone, and Guard /Guide/Boundary pillar

MoRTH Specification (Suggestive) 801, 804 and 806

Providing and fixing of road studs, sign boards, KM stone and Guard, Guide, Boundary pillar on the road as directed by Engineer-in-charge.

**PERIODICAL MAINTENANCE**

**Item No: 3.1& 3.2**

Tack Coat

MoRT&H Specification No. 503

Applying of tack coat for SDBC and BM as directed by Engineer-in-charge.

SDBC

MoRT&H Specification No. 508,
Construction of SDBC, with Bitumen 60/70 grade (or VG 30) of 4.5-5.0% total weight, as directed by Engineer

Thermoplastic road marking
MoRTH Specification No.803
Providing and applying thermoplastic road marking paint on the pavement surface as directed by Engineer-in-charge.

Fixing Road Studs
MoRTH Specification (Suggestive) 801, 804 and 806
Providing and fixing of road studs, sign boards, KM stone, HM stone and Guard, Guide, Boundary pillar on the road as directed by Engineer-in-charge.

Gravel material for roadside repairs
Specification - MoRTH Clause 407
Construct Gravel shoulders as per MoRT&H Specification 401 & 407 for road side repairs as directed by the Engineer-in-charge.

MINOR IMPROVEMENTS

Tack Coat (Item 4.6)
MoRT&H Specification No. 503
Applying of tack coat for SDBC and BM as directed by Engineer-in-charge.
Payment shall be made at the scheduled rate for the area of work in square metres as measured and agreed on Site with the Engineer-in-Charge or delegated representative

Bituminous Macadam (Item 4.7)
MoRT&H Specification No. 504, 521 (Modified Binder)
Construction of BM, with 60/70 Grade (or VG 30) Bitumen of 3.3% total weight, as directed by Engineer-in-charge.
Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-Charge or delegated representative.

Scarifying the existing Bituminous Surface (Item 4.1)
MoRT&H Specification No. 305.4.3
Scarification shall be done as directed by the Engineer-in-charge.
Payment shall be made at the scheduled rate for the area of work in square metres as measured and agreed on Site with the Engineer-in-Charge or delegated representative.
Construction of Granular Sub-base (Item 4.3)

MoRT&H Specification No. 401

Construction of GSB shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-Charge or delegated representative.

Providing, Laying Wet Mix Macadam (Item 4.4)

MoRT&H Specification No. 406

Laying of WMM shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

Providing and laying Surface Dressing (Item 4.5) - as per MORTH specification payment shall be made at the schedule rate for the area of work in sqm as measured and on site agreed by Engineer-in-Charge or delegeted representative.

Laying of SDBC (Item 4.8)

MoRT&H Specification No. 508

Laying of SDBC shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

CC and RCC of different grades (Item 4.12, 4.13, 4.14, 4.15)

MoRT&H Section No. 600, 1500, 1600, 1700, 2900, 2000, 2100, 2200, 2300, 2600, 2700 etc.,

Laying of Concrete shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

Earth Work Excavation of Soils (Item 4.9)

MoRT&H Specification No. 304

Excavation shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.
Sand Filling (Item 4.10)

MoRT&H Specification No. 304

Sand Filling shall be done as directed by the Engineer-in-charge.

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Engineer-in-charge or delegated representative.

Grouted Revetment (Item 4.16)

MoRT&H Specification No. 2504

Grouted Pitching shall be done as directed by the Employer

Payment shall be made at the scheduled rate for the volume of work in cubic metres as measured and agreed on Site with the Employer or delegated representative.

B5 Amendment to Material Specifications

The following changes are noted to the MoRTH Specifications

Use of Bitumen Emulsion

An emulsified bitumen mix compatible with the existing layer shall be used as the top surfacing of deep pothole or for complete shallow potholes.

The bituminous mixture used for such patch repairs shall be in accordance with MoRTH Section 3004.

The Contractor shall use only bitumen emulsion in carrying out any crack sealing or light surface sealing. A hand or electric emulsion pump shall be used to evenly distribute or spray the emulsion.

Drummed bitumen or drummed cutback bitumen will not be an acceptable substitute unless for the production of storable premix or bituminous or approved by the Engineer-in-charge.

B6 Testing of Materials and Work

The Contractor is informed that no known borrowing pits are located in the contract area and that it will be the responsibility of the Contractor to locate his own resources required for this contract. Prior to the extraction of materials for use on the roads included in the contract, the contractor is obliged; (i) to carry out the laboratory tests necessary to determine the quality of the materials, (ii) he has satisfied himself as to the sufficiency of the technical characteristics and the quality of the materials he intends to use for the intended purposes, (iii) the extraction is in conformity with the legislation and (iv) he has informed the Employer of his intention to utilize the material. Under
no circumstances may the Contractor make any claims based on the insufficient quality of any of the materials he has used

Further to Clause 20 of the General Conditions, the Contractor is to ensure the following.

a) Responsibility

The Contractor shall be responsible for the carrying out of all tests of materials and work required under the Contract. The Contractor shall establish or have full access to a fully equipped laboratory to carry out all required tests and quality control work. The Contractor shall permit full access to the laboratory for Employer staff to undertake any testing required by them.

b) Testing Costs

The Contractor shall bear the full expense of all establishments, management, and incidental costs in carrying out the required tests for all works. All such costs shall be deemed to be included as part of the Lump Sum component for OM as applicable payment in Schedule 1 under the Contract.

c) Sampling

All sampling whether carried out by the Employer or the Contractor shall be carried out in the presence of an authorized representative of the Contractor and the Employer. At least 24 hours notice is required for both parties to attend any sampling for testing purposes. Where the Contractor’s representative fails to attend the results of such sampling will be notified to the Contractor and will be deemed authentic.

d) Testing Frequency

In the event that the frequency of testing is not detailed in the Specifications for any specific item of material or works, it shall be as instructed by the Employer.

e) Test Results

The Contractor shall furnish all test results to the Employer as a monthly summary or at a frequency directed by the Employer. The Employer may withhold payment for those works where test results have not been verified.

B7. Traffic Management

In addition to the Traffic Management requirement of MoRTH Clause 112 the Contractor is to ensure the following.

The Contractor is responsible to ensure the safety of their workers and road users, including non-motorized road users and pedestrians, by installing and maintaining at his cost, adequate signalling and demarcation of work sites, which in addition must comply with the applicable legislation.

If the execution of services and works under the Contract is likely to interfere with traffic, the Contractor shall take at his cost the measures necessary to limit such interference to the strict
minimum, or any danger to the workers or others. For that purpose, he is entitled to install, within the right-of-way of the road, temporary bypasses, structures or other modifications to be used by traffic during the execution of works and services. The Contractor shall notify the Employer prior to implementing any such temporary installations.

On both sides, suitable regulatory / warning signs as approved by the Employer shall be installed for the guidance of road users. On each approach, at least two signs shall be put, one close to the point of actual working zone and the other 100 to 150 m away as advance warning sign. The signs shall be of approved design and of reflective type.

If the execution of Works and Services by the Contractor makes it necessary to temporarily close a road section, and a traffic detour has to be implemented over other public roads or streets, the Contractor shall be responsible for the cost of constructing the detour and placing adequate signalling of the detour. Additionally, if the installation of a detour is necessary due to the failure of any drainage structures, the Contractor shall construct a detour with adequate signing for the safe passage of the travelling public.

The Contractor shall inform the Employer, Local Authorities and the local Police about such activities to be carried out by him which may cause any significant interruptions or changes to the normal traffic patterns. Such information shall be made in writing and at least seven (7) days before the beginning of such activities. Upon request from the Contractor, the Employer shall assist the Contractor in the coordination with the local authorities and the local police.

The cost of implementing all traffic management provisions shall be deemed to be included in the Lump Sum component for Ordinary Maintenance, Initial Rectification, and Periodic Maintenance and in the rates of Minor Improvement Works.

The Contractor is to take note of the following special circumstances:

(i) Obstruction to traffic

If broken down vehicles or any other cause obstructs the road, the Contractor shall take the following steps to safeguard traffic:
   a) Provide any signs, traffic controllers, etc., necessary to protect the public;
   b) If the person responsible can be located, ask them to remove the obstruction immediately;
   c) In cases of serious obstruction or obstructions which may remain overnight, inform the Employer who may direct action to be taken by the Contractor.

(ii) Private entrances

Any person wishing to construct a private entrance to a property must first obtain the consent of the Employer. Any new entrance observed by the Contractor, shall be reported to the Employer for his information and action.

The maintenance of the surfacing of a private entrance is the responsibility of the owner, however the Contractor shall maintain all private entrance culverts as part of the Lump Sum.
The Employer may direct that a private entrance culvert, which has been installed without approval, but otherwise satisfies the Employer’s requirements, remains the responsibility of the owner.

(iii) Disposal/ Dumping of Municipal Solid Waste or construction debris by the local population and authorities

The contractor shall report the matter to the Employer immediately on such dumping for their necessary corrective action.”

### Section V, Part C

**Ordinary Maintenance Specifications**

**Part C Specifications for Ordinary Maintenance Works**

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4.7.2 Variation & Gradual Appliance
4.7.3 Procedure for Inspection

5. Specification for Usability of Road
5.1 Service Level
5.2 Variation & Gradual Appliance
5.3 Procedure for Inspection

6. Adjustment for Periodic Maintenance, Minor Improvement and deleted Sections

7. Payment Reduction and Liquidated Damages

C1 General
The Contractor shall maintain each asset item to the specified Intervention Criteria and service levels as part of the Contract Lump Sum for the criteria:

- Sealed Pavement
- Signage and Road Safety
- Drainage
- Vegetation
- Structures
- Shoulders, Batters & Slope Stabilisation

The Contractor is deemed to have carried out preliminary surveys of the relevant Roads prior to bidding in order to evaluate all Ordinary Maintenance (OM) related obligations and to assess the annual Lump Sum cost of OM.

The Ordinary Maintenance (OM) shall be carried out on all Roads covered by the Contract to the specified service quality levels for a period of 5 years, including:

- The provision of management services as required for the duration of the Contract,
- Provision of committed PMU vehicle/s to carry out OM responsibilities,
- Undertaking regular condition surveys, including regular monitoring and reporting of the condition of all Roads under the Contract,
- Undertaking inspections at the frequencies required (as a minimum) and identifying defects and carrying out maintenance works,
- Establishing programs for Ordinary Maintenance based on meeting required intervention standards,
- Scheduling maintenance work to meet the required maintenance standards.
- Providing effective traffic management for all works undertaken to ensure public safety and the safety of the Contractor’s workforce,
- Maintaining records of all work undertaken,
Provide a Quality Plan for the Employer’s approval within 8 weeks of the Start Date and implement all quality management requirements.

In respect to area of responsibility for works by others the following shall apply:

(i) Rail crossing repairs

The Contractor shall be responsible for repairs to pavement in the immediate vicinity of rail crossing. Where defective rail lines are the cause of damage to the pavement, the Contractor shall notify the Employer.

(ii) Restoration of road openings

In general, Employer is responsible to reinstate all service utility road openings undertaken by a Service Authority or its contractors. The Employer may direct that temporary reinstatement or final restoration is be carried out by the Contractor as a variation to the Contract or at a fixed cost outside the Contract. The Contractor is to notify the Employer immediately when any new road opening is noted.

Where the road surface fails above a completed restored road opening, the Contractor shall repair the defect as part of the Lump Sum

The cost of implementing the above provisions shall be deemed to be included in the Lump Sum component for OM

C2 Patrol Maintenance Unit (PMU)

The Contractor shall provide and run daily, except on Sundays and holidays permitted by the Employer, a minimum of one committed Patrol Maintenance Unit (PMU) comprising personnel and equipment to undertake the carrying out of the Ordinary Maintenance Lump Sum works as specified.

The PMU shall be a new truck (minimum 6 tonne) well fabricated and GPS enabled to meet the requirement, painted and labelled appropriately for safety and public awareness to the Employer’s satisfaction. Each PMU shall have as a minimum requirement:

a) 1 No. Patrol Foreman
b) 1 No. Heavy Vehicle Driver
c) 5 No. Maintenance Workers
d) PMU to be equipped with 2 no Mobile Phone
e) 1 No. Jack Hammer
f) 1 No. Compressor
g) 1 No. Vibrating Plate Compactor
h) 1 No. Chainsaw
i) 1.0. m³ Cold Storable Bituminous Premix and 0.5 m³ of sand
j) 2 No. “Half Road Closed” Signs
k) 2 No. “Road works Ahead Signs”
l) 12 No. 300 mm plastic ‘high visibility’ coloured traffic cones
m) 200 kg drum of Bitumen Emulsion
n) A hand (or electric) Emulsion Spray Pump
o) 200 litre drum of Water
p) 2 No. Rakes
q) 2 No. Long Handle Shovels
r) 2 No. Long Handle Heavy Duty Brooms
s) 2 No. Picks
t) High Visibility Jackets (Uniform) for all the PMU crew
u) Foldable aluminium ladder.
v) Operational Flashing amber lights fitted to the Patrol Truck
w) Patrol Maintenance Unit (PMU) Vehicle Identification visibly painted on Vehicle (Contractor’s Name, Client’s Name, Road Names, Unit No., and Emergency Contact Phone No.)

The above resources shall be engaged full time per PMU on the Ordinary Maintenance Lump Sum activities (Standard Jobs) for works under this Contract, for a minimum of 8 daylight hours per day from 8.00 AM to 5.00PM with 1.00 hour lunch break from Monday to Saturday inclusive. Failure by the Contractor to provide the above resources will result in payment deductions to the Contractor for the Ordinary Maintenance component of the works as provided in Clause C7 of this Technical Specification.

The PMU shall also be the “Initial Emergency Response Unit” and shall have the capability of the following:

- Capable to hold a half cubic metre of sand (or other suitable absorptive or granular material depending on the nature of the requirement);
- After hour response a minimum two person crew;
- Emergency kit of temporary warning signs, flashing lights, barriers, safety clothing, shovels and brooms.

Also the PMU must carry at all times the Emergency No. of Police, Fire, Ambulance, Medical/Hospital centre along entire route to facilitate help in event of accidents and emergency encountered. A listing of all emergency contact phone numbers shall be circulated by the Contractor to all relevant officers, including the Contractor’s staff and the Employer prior to the Start Date.

The contractor will be paid a monthly lump sum towards the net procurement cost i.e. initial cost of truck excluding residual value of truck added with diminishing rate of interest as per bank interest rates. However the operational costs are treated to be included in OM monthly lumpsum.

The Contractor shall use additional resources for carrying out all Initial Rectifications, Periodic Maintenance and Minor Improvement works.

C3 Specification of Service Level Criteria

This section specifies the Service Levels to be complied with in the case of paved roads. There are three overall criteria:

- Road User Service and Comfort Measures
- Road Usability
### Project Measurement Requirements

#### C4 Specification of Road User Service and Comfort Measures

##### C4.1 Paved Roads (Table C4.1.1 – OM100)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.1.1

Further to Table 4.1.1, the following requirements are to be addressed by the Contractor:

(i). Potholes (OM 101):

No pothole is to be left untreated on any section of the road. Potholes causing a threat to public safety area >0.02 sqm will be repaired within 1 day, others shall be repaired within the Response Time. Potholes will be detected by visual inspection.

(ii). Surface Depressions (OM 102):

No depression greater than 70mm depth when measured under a 1.2 metre straight edge are permitted. Repairs are to be responded within 2 days of detection. Rutting and other surface roughness greater than 30mm under a 1.2 metre straight edge in isolated areas >10m² is to be completed in the Response Time.

(iii). Crack Sealing (OM 103)

Cracking greater than 5mm wide is to be sealed within the Response Time. Cracking is detected by visual inspection. It is of particular importance that crack sealing is completed prior to the end of the work season each year or the date predicted for the onset of the wet season and before the commencement of the Periodic Maintenance program. Where the cracking is of “crocodile” nature, treatment may be by Surface Treatment as outlined in item (iv) below.

(iv). Surface Treatment (OM 104)

A light surface seal (> 5m² at any one location) will be placed over solid pavement areas which are moderately distressed with fine surface cracking. The Contractor shall thoroughly sweep and clean the area to be treated, and seal any cracks > 5mm or ‘crocodile’ cracks with bitumen emulsion. Any pavement weaknesses should be brought to the attention of the Project Manager before work commences. Seal the surface as per SOR Type ‘A’ clause 5.12. The surface shall be protected from traffic until the seal has properly set. All loose material shall be swept and removed from the site prior to full trafficking. The bitumen emulsion shall be Cationic Rapid Setting, conforming to the requirements of IS: 8887.
(v) Pavement Sweeping (OM 105)
Where a spillage of hazardous materials has occurred after an accident i.e. oil, glass, debris etc or in other emergency event, the pavement shall be cleaned of the offending materials immediately. The Contractor shall bring this type of incident to the notice of the District Administrator and the regional office of the state pollution control board about the incident. This shall also apply to unauthorised deposition of household or industrial waste onto road pavement or shoulders. Build-up of silt, dirt or gravel, particularly at intersections and against central medians that may cause braking cars to skid shall be removed.

(vi) Edge Repair (OM 106)
The edge of the road surface should be free of excessive fretting or beaks of the surfaced width and erosion that will encourage water ingress into the pavement and result in unsafe ride quality for vehicles forced to use the shoulder of the carriageway. All breaks >100mm shall be repaired in the Response Time.

(vii) Dig out Repair (OM 107)
Identify the cause of failure and appropriate treatment. Ensure the cause is removed either prior to or as part of the repair. If necessary, stabilize the sub-grade with lime, cement or geo-textile and if seeping water is present, install subsoil drains. Repair shall be undertaken in accordance with Section V of this specification. Dig outs < 5m² will be considered for repair.

(viii) Repair of Concrete Pavement (OM 108)
The repairs to broken concrete or bituminous joint material, to preserve underlying pavement material and restore the riding surface to a smooth condition. Identify the extent of damage and appropriate treatment. Work shall include preparing and cleaning the existing concrete and removing any loose, spalling material. Exposed reinforcing shall be repaired/replaced and new M35 concrete placed, vibrated, finished and cured. Repair >0.25 sqm will be considered for repair.

C4.1.1 Service Level
The service level criteria for road user service and comfort on paved roads are defined as follows
### Table C4.1.1 Standard Jobs, Intervention Criteria and Response Times for Paved Roads

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OM101 POTHOLE PATCHING</strong></td>
<td>Potholes in traffic lane of a sealed pavement &gt; 0.02 sqm</td>
<td>H 1 day</td>
</tr>
<tr>
<td></td>
<td>Repair all potholes</td>
<td>R 1 week</td>
</tr>
<tr>
<td><strong>OM102 SURFACE DEPRESSION and RUT PATCHING</strong></td>
<td>Deformations greater than 70mm under a 1.2 m straight edge</td>
<td>H 2 days</td>
</tr>
<tr>
<td></td>
<td>Deformations greater than 30mm under a 1.2 m straight edge</td>
<td>R 4 weeks</td>
</tr>
<tr>
<td><strong>OM103 CRACK SEALING</strong></td>
<td>All cracks &gt; 5 mm. width</td>
<td>R 4 weeks</td>
</tr>
<tr>
<td></td>
<td>(a) loss of aggregate (surface ravelled); (b) bleeding and flushing; or (c) laminated asphalt surface.</td>
<td></td>
</tr>
<tr>
<td><strong>OM104 SURFACE TREATMENT</strong></td>
<td>Treat when:</td>
<td>R 4 weeks</td>
</tr>
<tr>
<td></td>
<td>(a) stripping/ravelled &gt; 30% loss of aggregate for an area &gt;5 m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b) bleeding/flushing for an area &gt;5 m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) all “crocodile” cracking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(d) delaminated surface &gt;0.25m²</td>
<td></td>
</tr>
<tr>
<td><strong>OM105 PAVEMENT SWEEPING</strong></td>
<td>When fallen debris, slippery substances, accumulation of granular material, ponding of water or any other obstacle becomes a danger to traffic or pedestrians</td>
<td>H 1 day</td>
</tr>
<tr>
<td></td>
<td>When accumulation of aggregate, dirt or debris prevents the free drainage of the pavement</td>
<td>R 4 weeks</td>
</tr>
</tbody>
</table>

**Inspection Frequency**: H (Hazard) - weekly; R (Routine) – monthly; B (Bridge and Major Culverts) – 6 monthly; N (Night) – 6 monthly; E (Emergency) – immediate or as directed.
**Inspection Frequency**: H (Hazard) - weekly; R (Routine) – monthly; B (Bridge and Major Culverts) – 6 monthly; N (Night) – 6 monthly; E (Emergency) – immediate or as directed

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM106 EDGE REPAIR</td>
<td>When break becomes a hazard</td>
<td>H 1 day</td>
<td>1 cum</td>
</tr>
<tr>
<td></td>
<td>When edge break exceeds 100 mm. laterally over at least a 1 m length from the nominal seal line.</td>
<td>R 4 weeks</td>
<td></td>
</tr>
<tr>
<td>OM107 DIGOUT REPAIR</td>
<td>When break becomes a hazard</td>
<td>H 1 day</td>
<td>1 m²</td>
</tr>
<tr>
<td></td>
<td>All failed areas</td>
<td>R 1 weeks</td>
<td></td>
</tr>
<tr>
<td>OM108 REPAIR OF CONCRETE PAVEMENT</td>
<td>All damaged areas</td>
<td>R 4 weeks</td>
<td>1 m³</td>
</tr>
</tbody>
</table>


C4.1.2 Variations and gradual compliance with Service Levels for Paved Roads

In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria is not expected during the period of initial rectification.

C4.1.3 Procedures for Inspection of Paved Roads

For the formal inspections of compliance with Service Levels, the Contractor’s Self-control Unit will work in close collaboration with, and under supervision of the Employer. The physical means needed for the inspections will be provided by the Contractor; they are the same which are normally used by the Self-control Unit for the continuous self-evaluation of the Contractor’s compliance.

C4.2 Signage and Road Safety (Table C4.2.1 – OM500)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.2.1

Further to Table C4.2.1, the following requirements are to be addressed by the Contractor:

(i) Signs

Signs consist of all ground (post-mounted) signs located along the roadway and include the following types of signs:

- Regulatory Signs
- Warning Signs
- Direction Signs
- Information and Traffic Instruction Signs
- Route Markers and Kilometre Markers
- Village Name Signs
- Hazard Markers
- Service and Tourist Signs, except privately funded signs identified by the Employer.

The Contractor shall ensure that the signs are maintained in good condition at all times and shall wash and clean sign faces, straighten posts, level sign boards, remove posters, tighten bolts and undertake minor repairs.

Quality levels and tolerance criteria:

(a) Meet reflectivity standards:

All signs must meet the requirements stated in MoRTH Specifications Sub-clause 801.3.2. All signs must be clearly visible and reflective to passing motorist under both daytime and night time conditions. The daytime inspection should be performed initially, followed by the night time survey.

(b) 100 percent clear of obstruction:

All signs, when viewed from the closest traffic lane, must be completely free of brush, trees, vegetation, and other obstructions that prevent passing motorist from adequately viewing the sign. Sign obstructions can be detected by visual inspection.
(c) Present and surface free of damage:

Signs have to be present, upright in a vertical position, and at least 95 percent of the total surface area of signs must be free of damage, i.e., holes, large dents, and missing reflective material or covered in advertising. The presence and condition of the signs can be checked by visual inspection.

(d) No encroachments/trespasses, illegal signs or structures:

No tolerance. Structures or signs that were not erected or authorized by the Employer should not exist within the right-of-way. Any transgressions can be detected by visual inspection and have to be reported in writing to the Employer within 24 hours after being detected, and all assistance provided to the Contractor in the eviction process.

(ii) Pavement marking

Pavement markings include lines and markings used to delineate traffic lanes and pavement edges. Pavement markings may consist of solid lines or broken lines that are yellow or white and arrows.

The Contractor will be responsible to reinstate by either hand or machinery, all pavement markings damaged or destroyed by his work with hot applied thermoplastic compound as approved by the Employer. The Contractor shall keep clean pavement markings. The re-application of thermoplastic markings will be done as a Dayworks approximately every 2 years. However, any damage to new re-applications shall be repaired by the Contractor under OM responsibilities.

(iii) Guard Stones/Boundary Stones/Guardrail

The Contractor shall ensure that established guard stones, boundary stones and guardrail are kept in good repair and shall regularly check posts to ensure that all are in place and functional. Painting and replacement of defective posts shall be paid as part of the OM Lump Sum.

Where more than 10 posts are missing at any single location, the Contractor should immediately notify the Employer. Supply only of replacement posts above 10 No. at a single location will be done in Dayworks.

All guard stones and guardrails shall be painted/repainted on a cycle of every 12 months as a part of OM responsibilities, including the painting/repainting of any new guard stones, boundary stones and guardrails which are installed. The works shall be scheduled evenly over 12 months and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 806. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

(iv) Distance Markers (Kilometer posts)

Kilometre marker stones are generally located at 1 km intervals and show the highway number and distance to the next significant town or the start of that section of highway on non-radial routes. Five kilometre marker stones are located at 5 km intervals and show the highway number, the distance to the next town and also the distance the next significant town on the route.

All distance stones shall be repainted and kept in good repair by regular maintenance. Any damaged or missing stones shall be notified to the Employer...
promptly and supply only approved as a Provisional Item. Distance markers shall only be re-positioned or re-installed to an exact location as directed by the Employer. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

All distance markers shall be painted/repainted as a part of OM responsibilities, including the painting/repainting of any new distance markers which are installed. The works shall be scheduled evenly and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 804.

(v) Guideposts, delineators and hazard markers (painted trees)

The Contractor shall ensure that all guideposts and delineators are clean and replaced if damaged or non-reflective.

Guideposts and hazard markers that have been painted for delineation shall be repainted as a part of OM responsibilities, including the repainting of any new guideposts, delineators and hazard markers which are installed. The works shall be scheduled evenly and shall be shown in the Program including timeframes for completing various road sections. At least two painting cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 805. 12 months where white washing and colour banding is involved and 30 months where synthetic enamel painting is involved.

(vi) Cats Eyes

On sections of road where cats eyes have been installed, the Contractor shall maintain and replace any missing cats eyes. All new cats eyes installed shall be of road stud 100x100mm dia cast moulded from ASA. Only the installation of cats eyes on a section of road which previously did not have cats eyes shall be under Provisional Items. Any such new installations shall be subsequently maintained by the Contractor under OM responsibilities.

C4.2.1 Service Levels Measures for Signage and Road Safety

The Contractor is responsible for ensuring that all signage, as well as guardrails and other road safety devices fully comply with Acceptable Standard within initial rectification period.

The Service Level requirements for signage and road safety devices are as shown in the following Table:
## Table C4.2.1 Standard Jobs, Intervention Criteria and Response Times for Signage and Road Safety

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
</table>
| **OM501 SIGN MAINTENANCE** | Straighten sign posts when more than 5 degrees off vertical  
Clean sign and delineator faces when reflectivity is reduced due to accumulation of dirt.  
Repair damage | R, N  
2 weeks | 1 No. |
| **OM502 GUARDSTONES/BOUNDARY STONES/GUARDRAILS** | Fallen or damaged at a critical location making them substantially ineffective  
Other locations | R  
2 weeks | 1 No. |
| **OM503 DISTANCE MARKERS, GUIDEPOSTS, DELINEATORS, and HAZARD MARKERS** | Guideposts/Delineators missing or damaged at a critical location  
(a) functional requirements not met;  
(b) not visible from 100m at night on low beam  
As per agreed Program and with all distance markers, guideposts and hazard markers painted at least once every 12 months Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is done. | R, N  
4 weeks | 1 No. |
| **OM504 FOOTWAYS** | Defective pedestrian areas on islands and footpaths where step-up > 50mm. | R  
2 weeks | 1 m² |

**Inspection Frequency:**  
H (Hazard) - weekly;  
R (Routine) – monthly;  
B (Bridge and Major Culverts) – 6 monthly;  
N (Night) – 6 monthly;  
E (Emergency) – immediate or as directed

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**Section V: Technical Specifications**

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**Bidder**

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**Executive Engineer, Road Division**
### Standard Job Description

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM505 ROADMARKING &amp; CATS EYES</td>
<td>Repair of defective or faded thermoplastic markings and cleaning of all markings (Re-applications will be under Provisional Item). Maintenance of all/ damaged cats eyes</td>
<td>R 8 weeks</td>
<td>1 m²</td>
</tr>
<tr>
<td></td>
<td>Thermoplastic marking faded or damaged, and functional requirements not met.</td>
<td>R 4 weeks</td>
<td>1 No.</td>
</tr>
<tr>
<td></td>
<td>Cats eyes missing, damaged or functional requirements not met.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inspection Frequency:**  H (Hazard) - weekly; R (Routine) – monthly; B (Bridge and Major Culverts) – 6 monthly; N (Night) – 6 monthly; E (Emergency) – immediate or as directed

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**Executive Engineer, Road Division**

Section V: Technical Specifications
C4.2.2 Variations and gradual compliance with Service Levels for Signage and Road Safety

In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria stated above for Signage and Safety Devices shall not be expected until initial rectification period from the start date. Other limitations to the compliance requirement are:

All missing kilometer shall be put in place within the initial 6 Months from start date.

C4.2.3 Procedures for Inspection

The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Signage and Road Safety will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not meet, the one-kilometer section in which the deficit occurs will be judged non-compliant.

C4.3 Drainage (Table C4.3.1 - OM300)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.3.1

Further to Table C4.3.1, the following requirements are to be addressed by the Contractor:

The highest priority should be given to adequate drainage of the pavement and shoulders. Where ponding of water is observed in the vicinity of the pavement or shoulders, the PMU shall immediately shape a waterway to remove the water to the adjacent side drain. Temporary drains across existing shoulders shall be shallow and tapered as to not affect the safety of traffic or pedestrians, and shall be reinstated by shaping and/or grading when conditions are favourable to allow normal ‘sheet’ flow. The following visual inspections should be made:

(i) Cross drainage pipes, culverts and pits

Quality levels and tolerance criteria:

(a) Inside surface area of each cross pipe, culvert or pit must not be deteriorated:

No more than 10 percent of the inside surface area of each cross pipe can be deteriorated. Deterioration includes spalled or crushed concrete, crushed metal, or any other structural deterioration along the length of the pipe/culvert.

Where the defect is a collapsed or an un-maintainable unit or structure, the defect shall be referred to the Employer for repair.

The condition of the inside surface of the pipes can be detected by visual inspection.

(b) Waterway free of obstruction:

Each pipe/culvert must have at least 80% of its waterway open.

(c) No erosion at either end of the pipe/culvert that affect the structural integrity:

Erosion at either end should be less than 200mm and should not affect the structural integrity of the pipe/culvert or head wall. Erosion can be detected by visual inspection.
(d) No dip in road over pipe indicating structural problems:

No dips in the roadway over pipe deeper than 30 mm (measured longitudinally) are allowed. Dips are indicative of the settlement or erosion of the backfill material located around the cross pipe and may present a safety and pavement Performance problem. Dips in the roadway are to be visually identified from the shoulder or side drain and measured with a scale in mm.

(e) The headwalls and end protection at each end of the pipe/culvert

No tolerance. The headwalls and end protection located at each end of the pipe/culvert should be intact and secured. The condition of the headwalls and end protection can be evaluated by visual inspection.

Concrete/Masonry repairs < 1m³ at any one location shall be carried out by the Contractor to repair any defects and concrete damage.

White washing of exposed concrete/masonry areas of cross drainage structures shall be carried out in two coats to give an even and smooth surface for protection, including the scraping and cleaning of old surface.

(ii) Side drains, culvert inlet/outlet drains, kerb and channelling

Side drains collect the runoff of water from the pavement and shoulders parallel to the road and distribute to more major waterways. Culvert inlet/outlet drains channel water into and away from the road.

**Quality levels and tolerance criteria:**

(a) All side drains and culvert inlet/outlet drains must be graded such that positive drainage of surface flow exists:

Unpaved side drains or culvert inlet/outlet drains must not have depressions or high spots that either hold or trap water a distance of > 3 metres within the drain for several days. Depressions and high spots can be detected by visual inspection.

(b) No severe erosion along the side drains and culvert inlet/outlet drains:

No areas where the grass, sod, or gravels have been washed away or where soil erosion deeper than 200mm exists are allowed. Erosion can be detected by visual inspection.

(c) Outlets of side drains and culvert inlet and outlet drains must provide positive drainage:

Drains shall empty freely into larger channels as designed and should not exhibit erosion deeper than 200mm. The condition of the outlet can be detected by visual inspection.

(d) No obstruction to flow of water:

The side drains, culvert inlet/outlet drains and kerb and channels shall be free from obstructions such as severe sedimentation, vegetation growth or debris build up, that prevent the drains from adequately carrying water.

At the commencement of the Contract, where reinstatement/construction of side drains and culvert inlet/outlet drains are required to repair complete blockages, work will be identified during the initial survey and will be carried out under Initial Rectification Works during Milestone 1. All subsequent drain maintenance works shall be carried out under OM
C4.3.1 Service Levels

In general terms, the Contractor must ensure that all drainage elements and structures are sound and without any obstructions which may reduce their normal cross-section and impede the free flow of water.

The Service Level requirements for drainage structures or devices are as shown in the following Table C4.3.1
Table C4.3.1  Standard Jobs, Intervention Criteria and Response Times for Drainage

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time **</th>
<th>Unit of Work</th>
</tr>
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<tbody>
<tr>
<td>OM301 SURFACE DRAIN CLEANING Cleaning of channels, including kerb and channel, and reshaping earthen drains, including culvert inlet and outlet drains, to maintain flow of water and protect road and roadside from scour.</td>
<td>When there is, or is likely to be restriction or ponding of water or scouring</td>
<td>R</td>
<td>1 lineal m</td>
</tr>
<tr>
<td>OM302 CULVERT and PIT CLEANING Cleaning of Barrel/Vent, culverts, pits and stormwater drains to maintain flow of water.</td>
<td>When debris blocks &gt; 20% of culvert area and inhibits free flow.</td>
<td>R</td>
<td>1 No. (pit/culvert)</td>
</tr>
<tr>
<td>OM303 CULVERT and PIT REPAIR Repair or replacement of damaged pipes, culverts, pits, surrounds, grates, lids or lintels and headwalls. Whitewashing of exposed concrete/masonry to be carried out as required.</td>
<td>Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes When deterioration of pipe, culvert or pit &gt;10% or structure is in precarious condition</td>
<td>H</td>
<td>1 No. (pit/culvert)</td>
</tr>
<tr>
<td>OM304 RIVER and STREAM MAINTENANCE Maintenance and cleaning of debris from streams within 10 m of structure and repair minor scours.</td>
<td>Any log debris &gt;150 mm in diameter. Any accumulation of debris &gt;400 mm in dimension.</td>
<td>R</td>
<td>1 No. of Sites</td>
</tr>
</tbody>
</table>

**Inspection Frequency:**  H (Hazard) - weekly; R (Routine) – monthly; B (Bridge and Major Culverts) – 6 monthly; N (Night) – 6 monthly; E (Emergency) – immediate or as directed
C4.3.2 Variations and Gradual Compliance with Service Levels

In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria stated above for drainage shall not be expected during the period of initial rectification.

Other limitations to the compliance requirement are:

All drains must be cleaned and defect free immediately prior to the commencement of the wet seasons.

C4.3.3 Procedures for Inspection

The cleanliness and condition of drainage structures (including open drains, causeways and all other types of drainage devices) is part of the criteria for the “Durability of the Road”. It is verified on a regular basis, in particular before and during the rainy seasons. The drainage structures to be verified are determined by the Employer. Inspection is done visually.

The basic principle used to determine the cleanliness of drainage structures or devices is “the percentage of the theoretical cross-section of the structure or device which is unobstructed”. This percentage is specified in Table C4.3.1 above. For a one km road section, the cleanliness of drainage ditches must be verified at least on two subsections of 50 meters each.

For any one km section of the road, compliance with this criterion requires that (i) all drainage structures are clean in the sense defined above; (ii) all structures and devices are structurally sound, based on the judgment of the Employer.

C4.4 Vegetation (Table C4.4.1 - OM400)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.4.1.

Further to Table C4.4.1, the following requirements are to be addressed by the Contractor:

(i) Natural grass

Vegetation grown for the purpose of protecting shoulders, slopes, and embankments from erosion, and for aesthetic purposes. Natural Grass is considered that generally located along the roadway edges.

Quality levels and tolerance criteria:

Sight distance is clear in intersections, passing zones, and curves: Grass height should not prevent adequate sight distance (stopping or passing) at intersections, passing zones, and curves and must not obstruct the drainage.

(ii) Trees and shrubs

Consists of trees, limbs, shrubs and creepers located within the right-of-way. Trees and shrubs located in landscaped areas should be evaluated as landscaping.

Quality levels and tolerance criteria:

(a) Fallen trees

No tolerance. Any fallen tree on the road formation shall be removed immediately.

(b) Sight distance or sign obstructions:
No tolerance. Brush, as defined above, should not affect sight distance (stopping or passing), at intersections, passing zones, and curves. In addition, brush should not encroach onto any signs to the extent that visibility or readability of the sign is affected. Sight distance or sign obstructions can be detected by visual inspection.

(c) Vertical clearance:

No tolerance. A vertical clearance of at least 5.0 m over roadway should be maintained at all times. All tree limbs, shrubs, and creepers should be trimmed back to maintain this clearance. The measurement of the vertical clearance should be from the highest point of elevation on the traffic lanes or shoulders.

(d) No trees presenting a leaning hazard:

No tolerance. Trees or other vegetation that are leaning and present a safety hazard should not be located within the right-of-way. In addition, dead or dying vegetation that is either located within a clear zone or could fall on vehicles or pedestrians must not be present. Leaning vegetation can be detected by visual inspection.

(iii) Maintenance of traffic islands and divider having plantation.

The Contractor shall mow existing grass in these areas, as well as prune existing plants and bushes.

Quality levels and tolerance criteria:

(a) Grass can not be higher than 200mm in traffic islands:

No more than 20 percent of the total area can exhibit grass higher than 150mm.

(b) Traffic islands area must be free from weeds or other noxious vegetation:

No more than 20 percent of the total area can exhibit weeds or other noxious vegetation before intervention is required. Presence of weeds or other noxious vegetation can be detected by visual inspection.

(c) Plants/bushes/trees to be pruned, healthy, and must not obstruct the sight distance:

No more than 20 percent of the plants/bushes/trees can be in poor condition before intervention is required. No plants/bushes affecting sight distance are allowed. The condition of the plants/bushes can be checked by visual inspection.

(d) Fences etc in traffic islands, etc must be in good condition and painted:

More than 80% of the fences, culvert headwalls, bridge parapets, distance stones and kerbs must be in good condition and painted all the time. The condition of the fences etc can be checked by visual inspection.

C4.4.1 Service Levels

This section specifies the Service Levels to be complied with in the case of vegetation growing within the road right-of-way: Vegetation is to be controlled to the heights and clearance, at the locations and with the restrictions as set out in the table and diagram below:
### Table C4.4.1 Standard Jobs, Intervention Criteria and Response Times

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</table>
| OM401 Clearing and Grubbing | Mowing/slashing of roadside areas, maintain sight distance, reduce fire hazard and maintain a tidy appearance at:  
  (a) Medians and traffic islands  
  (b) Road intersections – maintain minimum sight distance to 30 m in advance of all road approaches and departures and any other nominated area.  
  (c) Safety signs, kilometre posts, guardstones and other roadside furniture – slash to ensure full vision. Maintain grass height to an average maximum 400 mm. | R 8 weeks | 1 sqm         |
| OM402 TREE and SHRUB MANAGEMENT | Maintenance of roadside areas, including brush cutting, foliage trimming and removal of vegetation.  
Tree limbs or trees that are in immediate danger of falling and causing a danger to the public  
Trees and shrubs which restrict intersection sight distance or obscure safety signs  
New tree and shrub growth within drains, clear zones, the shoulder and verge.  
Trim trees to maintain:  
- minimum 1 metre from back edge of shoulder and/or kerb;  
- minimum 5 metre height clearance over pavements. | R 1 day | R 4 weeks | R 8 weeks | 1 No. of Sites | 1 sqm |
Diagram 4.2 – Extent of Vegetation Control Requirements
C4.4.2 Variations and Gradual Compliance with Service Levels

In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria stated above for vegetation shall not be expected until initial rectification period from start date. Other limitations to the compliance requirement are:

(a) Use of Herbicides
   Use of herbicides is not allowed.

(b) Tree removal
   Removal or cutting of trees growing within the road right-of-way shall only be undertaken after approval of the Employer and/or appropriate authority.

C4.4.3 Means used for Assessing Compliance with Service Levels

The height of vegetation, and its clearance above the road surface and visibility of signs, is part of the criteria for the “Road User Comfort”. They will be measured at road sections selected by the Employer based on their visual appearance. The height is measured by using a ruler; it is defined as the vertical distance between the ground and the highest point of the vegetation. Clearance is also measured with a ruler or visibility from a distance of 50m assessed as normal driving speed; it is defined as the distance between the lowest point of the tree (or other plant) above the road surface or obstruction of the sign.

The average height of vegetation in a one km section will be equal to the average of five values measured in at sections selected by the Employer. The visibility is measured for any obstruction of any sign.

For any one km section of road, compliance with this criterion requires that the average vegetation height measured within the section of one km is below the maximum value stated in the contract or obstruction to any sign.

C4.5 Structures (Table 4.5.1 – OM600)

The Contractor is responsible for the ordinary maintenance of all minor bridges/culverts and similar structures along the roads and road sections included in the contract. In particular, he will be responsible for the correct functioning of the structures (painting of structures, road surface on structures, condition and presence of guardrails, etc) and the safety and comfort of road users while using the structures at normal speeds. Nevertheless, the reconstruction, structural repair and improvement of bridges and similar structures are excluded from the Contractor’s obligations, unless specified elsewhere in the Technical Specifications.

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table 4.5.1

Further to Table 4.5.1, the following requirements are to be addressed by the Contractor:

A structure is defined as culvert (upto 6 metres) and minor bridge (upto 60m). The Contractor shall inspect bridges in accordance with the guidelines of Appendix C – Form OM02, and maintain minor bridges, culverts and streams as specified:

(i) Ordinary maintenance requirements for structures
(a) Cleaning and clearing:
- Clean deck, footways, expansion joints of any earth/debris build-up
- Ensure scuppers and down-pipes are clean of debris and free draining
- Remove any debris build-up on superstructure or substructure
- Clear vegetation in or around bridge

(b) Structure deck/surface repair:
- Repair any defects in the bituminous/granular wearing surface
- Replace running planks on wooden decks if damaged
- Concrete/Masonry repairs < 1m³ at any one location

(c) Repairs or painting railing:
- Where previously painted, the Contractor shall paint all posts/parapets/railings/headwalls on culverts and/or bridges within 12 months of the commencement of the contract and shall repaint thereafter every 12 months.
- Repair spalled railing posts/parapets and crash damage where railing repair < 5 metres in length.
- Tighten posts or rails where required
- White washing of exposed concrete/masonry areas of bridges in two coats to give an even and smooth surface for protection, including the scraping and cleaning of old surface
- Repair and/or strengthen existing mild steel railings.
- Concrete repairs < 1m³ at any one location

(d) Stream maintenance:
- Ensure adequate drainage on structure approaches and embankments
- Remove all debris in and around bridge and within 10 metres upstream and downstream
- Where minor, scours shall be repaired. If the scour is > 5m³, in the initial survey the Employer should be notified, and repairs completed as an Initial Rectification Works.

(e) Signs and bridge furniture:
- Repair bridge signs and markings where required
- Advise Employer if additional signs are required
- Establish and/or repaint Structure Number on each structure

(f) Vandalism:
- Enact repairs needed due to vandalism including the removal of offensive graffiti

C4.5.1 Service Levels

The Service Level requirements for bridges, major culverts (>6m span) and retaining walls and similar structures are as shown in the following Table C4.5.1
Table C4.5.1 Standard Jobs, Intervention Criteria and Response Times for Structure

<table>
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<th>Unit of Work</th>
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<tr>
<td><strong>OM600 STRUCTURES</strong></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
| OM601 BRIDGE and MAJOR CULVERT MAINTENANCE | Inspection and maintenance of bridge components including:  
- (a) cleaning and clearing of deck, footway, expansion joints, scuppers and downpipes;  
- (b) repair of spalled superstructure, posts and parapets, tightening railing.  
- (c) whitewashing of exposed concrete/masonry  
- (d) repair and/or strengthening of MS railing | Any accumulation of material which affects proper drainage of water, or restricts the operation of expansion joints.                                                                                       | 8 weeks       | 1 No. of Sites |
|                           | Minor work on structural components and other repairs, protection of exposed surfaces                                                                                                                                     | R             |              |
|                           | Where previously painted, paint railings and parapets.                                                                                                                                                                    | B             | 8 weeks      | 1 No. of Sites |
|                           | As per agreed Program and with all railing and parapets painted at least once every 12 months. Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is involved.                           | B             | 12 months    | 1 No. of Sites |
C4.5.2 Variations and gradual compliance with Service Levels
In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria above for structures shall not be expected during initial rectification period. Other limitations to the compliance requirement are:

C4.5.3 Procedures for Inspection
The visual inspections will be undertaken as part of the Formal and Informal Inspections. The criteria for Structures will be checked at points selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged as non-compliant.

C4.6 Shoulders and Batter Slopes Stability (Table 4.6.1 – OM200)
The Contractor is responsible for the maintenance of all embankment and cut slopes along the roads sections included in the contract. In particular he is responsible for ensuring they are stable, without deformations and erosions. Nevertheless, the reconstruction and major improvements to retaining structures and slope stabilization is excluded from the Contractor’s obligations, unless specified elsewhere in the Technical Specifications.

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.6.1

Further to Table C4.6.1, the following requirements are to be addressed by the Contractor:

The shoulder is defined as the area from the edge of the paved lane to the point to the verge or side drain

(i) Unsealed Shoulder Repair (OM 201)
The activity aims to maintain the shoulder facility to support the pavement edge, the occasional use by traffic, its function as the drainage path for water runoff from the carriageway and to ensure the elimination of an edge drop off at the edge of sealed pavement. The Contractor shall fill depressions, scours and areas of drop off and ensure shoulder material supports the sealed edge. The material used for shoulder maintenance should be mechanically cohesive and able to display stability in wet weather. Shoulder material shall be suitably compacted. Where the edge drop-off is > 70mm over a continuous significant distance greater then 100m, the Contractor is to include resheet the shoulder in the Initial Rectification Works

(ii) Unsealed Shoulder Power Grading (OM 202)
All unsealed shoulders shall be graded, as a part of OM responsibilities, to restore shape and to eliminate roughness, shoulder wear and edge drop off, on a cyclic basis of every 12 months. The works shall be scheduled over 12 months, however the majority of the grading shall be carried out immediately following the monsoon. The schedule of power grading works shall be shown in the Program including timeframes for completing various road sections. Five power grading
cycles shall be carried out during the period of the Contract. Works shall be carried out in accordance with MoRTH 3003.

Every care shall be taken to ensure that the grader blade does not ride hard on the edge of the seal and damage it. Any damage caused to the seal or edge of pavement shall be made good by the Contractor at its cost. Potholes and scours shall be repaired before grading.

Shoulders shall be graded in the direction of traffic in such a manner that loose or windrowed material is removed from the adjacent sealed pavement as the work proceeds. Windrows shall be spread as soon as possible, shall not exceed 2 kilometres in length at any time and be completely spread before work ceases for the day. The Contractor shall take care to ensure that stones are not graded onto the pavement unnecessarily and final cross falls are sufficient to allow for a free draining pavement.

The graded material shall be adequately watered and compacted with a roller to facilitate support of the sealed edge and drainage away from the pavement.

(iii) Embankment and Batter Repairs (OM 203)

Repair of isolated embankment and batter damage, including at culvert sites and at other drainage structures, resulting from scouring, washouts, erosion, of volume <10m³ at any one site, shall be carried out to reinstate the embankment or batter to its original profile by means of constructing backfill with embankment quality material as approved by the Employer.
C4.6.1 Service Levels

The Service Level requirements are shown in the following table.

Table C4.6.1 Standard Jobs, Intervention Criteria and Response Times for Shoulders and Embankments

<table>
<thead>
<tr>
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<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM201 UNSEALED SHOULDER REPAIR</td>
<td>Edge drop off onto unsealed shoulder greater than 100 mm. deep</td>
<td>H</td>
<td>1 day</td>
</tr>
<tr>
<td></td>
<td>Edge drop off onto unsealed shoulder greater than 50 mm.</td>
<td>R</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>When potholes or scouring &gt; 70 mm depth measured with a 1.2 m straightedge, or when there is significant holding of water</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM202 UNSEALED Road repair</td>
<td>When pothole or scouring &gt;50 mm depth when measured with a 1.2 m straight edge</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM203 EMBANKMENT AND BATTER REPAIRS</td>
<td>When embankment or batter damage becomes a hazard</td>
<td>H</td>
<td>1 day</td>
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<td>1 day</td>
</tr>
<tr>
<td></td>
<td>Edge drop off onto unsealed shoulder greater than 50 mm.</td>
<td>R</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>When potholes or scouring &gt; 70 mm depth measured with a 1.2 m straightedge, or when there is significant holding of water</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM202 UNSEALED Road repair</td>
<td>When pothole or scouring &gt;50 mm depth when measured with a 1.2 m straight edge</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM203 EMBANKMENT AND BATTER REPAIRS</td>
<td>When embankment or batter damage becomes a hazard</td>
<td>H</td>
<td>1 day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM201 UNSEALED SHOULDER REPAIR</td>
<td>Edge drop off onto unsealed shoulder greater than 100 mm. deep</td>
<td>H</td>
<td>1 day</td>
</tr>
<tr>
<td></td>
<td>Edge drop off onto unsealed shoulder greater than 50 mm.</td>
<td>R</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>When potholes or scouring &gt; 70 mm depth measured with a 1.2 m straightedge, or when there is significant holding of water</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM202 UNSEALED Road repair</td>
<td>When pothole or scouring &gt;50 mm depth when measured with a 1.2 m straight edge</td>
<td>R</td>
<td>2 weeks</td>
</tr>
<tr>
<td>OM203 EMBANKMENT AND BATTER REPAIRS</td>
<td>When embankment or batter damage becomes a hazard</td>
<td>H</td>
<td>1 day</td>
</tr>
</tbody>
</table>
C4.6.2 Variations and gradual compliance with Service Levels

In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria for slope stability shall be initial rectification period in accordance with Structure activities.

C4.6.3 Procedures for Inspection

The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Slopes will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged non-compliant.

C4.7 Operational Servicing (Table C4.7.1 – OM700)

The following notes requirements are to be read in conjunction with the Specifications as stated in Section V part C and Table C4.7.1.

Further to Table C4.7.1, the following requirements are to be addressed by the Contractor:

(a) Landslips

The Contractor shall repair all minor landslips under the Lump Sum. Where the slip requires replacement material > 5m³, or the effort to repair is of a specialised nature, the Employer should be advised and payment made under Emergency Works.

(b) Initial Emergency Call out response

Prior to commencement of work on-site, the Contractor shall provide the Employer with details of a contact person available 24 hours per day, and other contact numbers that will be used by the Contractor during any emergency response.

The Contractor shall provide 24 hours per day capability to respond to an emergency within the response time specified, from the time of notification.

The Contractor's initial response to any emergency shall, within the capability of the PMU, make the incident site safe for the public or otherwise assist the control agency i.e. police etc. Any response which exceeds the capability of the PMU is to be immediately notified to the Employer. The Employer may direct that additional Contractor resources be provided and paid for as Emergency Works.

In the event of site specific damage to the road surface by a storm, accident, or other incident, the Contractor shall be required to supply and lay up to 5m³ of granular pavement material and/or 5m² of bituminous surfacing for permanent or temporary repair under the provisions of the Lump Sum. Where specific damage requires replacement material > 5m³ of granular material and > 5m² of bituminous surfacing or the effort to repair is of a specialised nature, the Employer should be advised and payment made under Emergency Works.

Where a traffic diversion is required, prior permission must be obtained from the Employer and Police. A traffic management plan showing placement of signs,
detour routes and location of traffic control men shall be approved by the Employer prior to the diversion.

The Contractor shall co-operate with the control agency and other emergency services. Any request to carry out work outside the road reserve shall be referred to the Employer for approval prior to the work being undertaken.

The Contractor is not responsible for salvaging vehicles which have been damaged in crashes and is not required to assist the owners of such vehicles except where necessary for the safety of the public or to reduce delays to traffic.

(c) Wet weather and flooding

During wet weather (monsoon) the Contractor shall pay particular attention to sections of road which are likely to be damaged or inundated by water. The Contractor shall provide signs on inundated sections of road, clear waterways, pit entrances and culverts of obstructions, and divert water from the roadway when necessary.

The Contractor shall remove all blockages from bridges and culverts immediately water levels permit such work to proceed. In case of flood, the highest level reached by the water on both sides of the road shall be recorded and the Employer advised within seven (7) days.

Where roads become pot-holed during wet periods i.e. monsoon, the Contractor may request to the Employer that temporary repairs be undertaken. Such temporary works shall be paid as part of the Lump Sum unless the Employer ascertains that the road section is beyond the provisions of Intervention Maintenance.

(d) Vandalism

The Contractor shall remove all graffiti and repair minor structural damage to road furniture assets caused by vandalism. The removal of graffiti may be by repainting or chemical solvent and the remaining surface visually similar to the original state.

(e) Dead animals

The Contractor shall remove all dead animals from the road pavement immediately and in accordance with local by-laws. All dead animals are to be removed from the road reservation within 24 hours. The Contractor shall arrange for the disposal of the carcass and all works are included in the Lump Sum.

(f) Road Obstructions

The Contractor is to remove any obstructions within the road traffic lanes which are a traffic, safety or health hazard within the road reserve. Obstructions may include cardboard, old tyres, paper, wood, garbage, rubbish, glass, metal, rubber, dirt, waste matter, or anything of a like nature that has a physical dimension >300mm. that is a visual detriment to the public. Obstructions of a hazardous nature to the public and dead animals shall be removed immediately.
### Table C4.7.1 Standard Jobs, Intervention Criteria and Response Times for operational Servicing

<table>
<thead>
<tr>
<th>Standard Job Description</th>
<th>Intervention Criteria</th>
<th>Response Time</th>
<th>Unit of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OM701 LAND SLIP CLEARING</strong></td>
<td>When event is detected or made known</td>
<td>E</td>
<td>1 m³</td>
</tr>
<tr>
<td>All work associated with the removal of all material from the road pavement and table drain up to and including the first 5m³ of rock and/or earth slips from the road and table drain including the disposal of the material at a suitable dump site</td>
<td></td>
<td>Same day</td>
<td></td>
</tr>
<tr>
<td><strong>OM702 EMERGENCY WORKS AND SERVICES</strong></td>
<td>When event is detected or made known</td>
<td>E</td>
<td>1 No. (incident)</td>
</tr>
<tr>
<td>All work arising from emergency incidents including flooding, fires, storms, traffic crashes, etc. to ensure the safety of the public and protection of the infrastructure.</td>
<td></td>
<td>Same day</td>
<td></td>
</tr>
<tr>
<td><strong>OM703 VANDALISM REPAIR</strong></td>
<td>When vandal damage or graffiti is a hazard or objectionable to the public</td>
<td>H</td>
<td>1 No of Sites</td>
</tr>
<tr>
<td>Repair or reinstatement of isolated minor damage of &lt;5 m² caused by vandalism, including all graffiti.</td>
<td></td>
<td>Same day</td>
<td></td>
</tr>
<tr>
<td><strong>OM704 ROAD OBSTRUCTIONS and DEAD ANIMALS</strong></td>
<td>Any carcass or when an obstruction on the road becomes a traffic, safety or health hazard or is visually upsetting</td>
<td>H</td>
<td>1 No.</td>
</tr>
<tr>
<td>Collection and removal of obstructions on the road of dimension &gt; 300mm and all carcasses from within the road reserve.</td>
<td></td>
<td>Same day</td>
<td></td>
</tr>
</tbody>
</table>
C4.7.2 Variations and gradual compliance with Service Levels
In order to respect the Contractor’s initial mobilization period, compliance with any of the service level criteria for slope stability shall be initial rectification period in accordance with Structure activities.

C4.7.3 Procedures for Inspection
The visual inspection will be undertaken as part of the Formal and Informal inspections. The criteria for Slopes will be checked at sections selected by the Employer based on visual appearance. The Employer shall be the sole judge of compliance. If a specified criterion is not met, the one-kilometer section in which the deficit occurs will be judged as non-compliant.

C5 Usability of the Road
C5.1 Service Levels
The Contractor will have to ensure that the road is open to traffic and free of interruptions at all times.

C5.2 Variations and gradual compliance with Service Levels
Permitted exceptions are

<table>
<thead>
<tr>
<th>Event</th>
<th>Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road accidents</td>
<td>Time after each event</td>
</tr>
<tr>
<td></td>
<td>4 hours after release from police</td>
</tr>
</tbody>
</table>

C5.3 Procedures for Usability Inspection
There is no particular testing method for the usability of a road, other than driving on the road in a normal manner, utilizing the type of vehicle indicated in clause C2 of Section V. The condition is not complied with if the road is interrupted at any point. The condition is however complied with if it is possible to continue to drive on the road, and without the vehicle suffering any damage caused by the bad condition of the road.

C6 Adjustment for maintenance of Periodic Maintenance, Minor Improvement and Deleted of Road Sections
The Contractor shall be responsible for carrying out all maintenance works on those sections of roads undergoing Minor Improvement Works or Periodic Maintenance by other agencies except for the period when the works site is in the possession of others.

C6.1 During the term of the Contract, sections of road within the Contract may need to be deleted from the Contractor’s OM responsibilities for specific periods of time as directed by the Employer
The sections of Road to be deleted will include either the exclusion of full OM responsibilities or partial OM responsibilities.
C6.2 In the case of partial OM responsibilities, unless otherwise instructed by the Employer, the Contractor’s responsibilities will be categorised either as Type A, B as described below:

<table>
<thead>
<tr>
<th>Type</th>
<th>OM Code</th>
<th>OM Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>OM 101</td>
<td>Pothole Patching</td>
</tr>
<tr>
<td></td>
<td>OM 102</td>
<td>Surface Depression &amp; Rut Patching</td>
</tr>
<tr>
<td></td>
<td>OM 103</td>
<td>Crack Sealing</td>
</tr>
<tr>
<td></td>
<td>OM 104</td>
<td>Surface Treatment</td>
</tr>
<tr>
<td></td>
<td>OM 106</td>
<td>Edge Repair</td>
</tr>
<tr>
<td></td>
<td>OM 107</td>
<td>Digout Repair</td>
</tr>
<tr>
<td></td>
<td>OM 108</td>
<td>Repair of Concrete Pavement</td>
</tr>
<tr>
<td>B</td>
<td>OM 105</td>
<td>Pavement Sweeping</td>
</tr>
<tr>
<td></td>
<td>OM 201</td>
<td>Unsealed Shoulder Repair</td>
</tr>
<tr>
<td></td>
<td>OM 202</td>
<td>Power Grading of Unsealed Shoulder</td>
</tr>
<tr>
<td></td>
<td>OM 203</td>
<td>Embankment and Batter Repairs</td>
</tr>
<tr>
<td></td>
<td>OM 301</td>
<td>Surface Drain Cleaning</td>
</tr>
<tr>
<td></td>
<td>OM 302</td>
<td>Pipe, Culvert and Pit Cleaning</td>
</tr>
<tr>
<td></td>
<td>OM 303</td>
<td>Pipe, Culvert and Pit Repair</td>
</tr>
<tr>
<td></td>
<td>OM 304</td>
<td>River and Stream Maintenance</td>
</tr>
<tr>
<td></td>
<td>OM 401</td>
<td>Grass Control</td>
</tr>
<tr>
<td></td>
<td>OM 402</td>
<td>Tree and Shrub Management</td>
</tr>
<tr>
<td></td>
<td>OM 501</td>
<td>Sign Maintenance</td>
</tr>
<tr>
<td></td>
<td>OM 502</td>
<td>Guardstones/Boundary Stones/Guardrail</td>
</tr>
<tr>
<td></td>
<td>OM 503</td>
<td>Distance Markers, Guideposts, Delineators and Hazard Markers</td>
</tr>
<tr>
<td></td>
<td>OM 504</td>
<td>Footways</td>
</tr>
<tr>
<td></td>
<td>OM 505</td>
<td>Roadmarkings and Cats Eyes</td>
</tr>
<tr>
<td></td>
<td>OM 601</td>
<td>Bridge and Major Culvert Maintenance</td>
</tr>
<tr>
<td></td>
<td>OM 701</td>
<td>Land Slip Clearing</td>
</tr>
<tr>
<td></td>
<td>OM 702</td>
<td>Emergency Works and Services</td>
</tr>
<tr>
<td></td>
<td>OM 703</td>
<td>Vandalism Repair</td>
</tr>
<tr>
<td></td>
<td>OM 704</td>
<td>Road Obstruction and Dead Animal Removal</td>
</tr>
</tbody>
</table>

C6.3 Situations where the need will arise for the addition or deletion of road sections, and the subsequent need for the inclusion or exclusion of the Contractor’s OM responsibilities, will include, but will not be limited to, the following:

(a) Major works contracts if any under PM & MI works which have been let by the Employer within a road section to other contractors for a specific period of time in that case, the Contractor’s full OM responsibilities will be excluded for the period of the major works contract up to its completion date (inclusive of any approved time extensions) on the applicable section of road.

(b) Major works contracts if any under PM & MI works let by the Employer within a road section which have been completed and are within the defects liability period in that case, from the time of completion and up to the end of the defects liability
period of the major works contract, the Contractor will carry out OM responsibilities for Type B items only as listed above on the applicable section of road.

(c) Major works contracts if any under PM & MI works let by the Employer within a road section which have reached the end of the defects liability period for the major works contract in that case, at the end of the defects liability period and on issuance of the final certificate by the Employer for the major works contract, the Contractor shall resume full OM responsibilities on the applicable section of road.

(d) A deteriorated section of road if programmed for major upgrading works or any stretches proposed to be converted as NH or otherwise or deletion of stretch for want of improvement in the future by the Employer, the same shall be deleted from the scope of the contract, and the OM payments reduced accordingly. However until the commencement of these major works, the Contractor shall carry out OM responsibilities on the applicable section of road as directed by the Employer in charge.

(e) If any Periodic Maintenance works and Minor Improvement works undertaken by the Contractor within a road section which is either in progress or is within the defects liability period in that case the contractor is however required to carry out full OM responsibilities through the contract period except from the Start Date of the PM & MI works and up to the end of defect liability period for that PM work, the Contractor shall be eligible for payment for Type B items only under Ordinary Maintenance as listed above on the applicable section of road.

(f) If there is any Delay or non-availability of necessary clearances/no objections from competent authorities to carry out works within a road sections that pass through national parks/sanctuaries/reserve forest areas or other sensitive areas in that case the road section will be suspended (till the clearances are obtained) or deleted from the scope of the contract as the case may be.

C6.4 The adjustment to the proportion of the monthly Lump Sum payable for OM to allow for the additions and deletions of sections of road shall be determined by the Employer in accordance with the following formulae:

\[ M_n = \frac{LS}{60} \times \left( \frac{LF + LB \times WB}{LT} \right) \]

Where:

- \( M_n \) = Monthly Lump Sum amount for OM applicable for month number “n” (with n being from 1 to 60).
- \( LS \) = The value of the Lump Sum applicable for OM for 5 years as stated in Schedule 1, Item 1.
LT = Total length of Roads included in the Contract and as stated in Clause A7(i) of the Technical Specification.

LF = Length of Road under the Contract for which Full OM responsibilities have been carried out by the Contractor for the month in question.

LB = Length of Road under the Contract for which only Type B OM responsibilities have been carried out by the Contractor for the month in question.

WB = Proportionate cost of carrying out Type B OM relative to the full cost of OM for a typical section of road (applicable for both State Highway and Main District Roads). WB shall be taken as 0.45.

C6.5 Payment amounts determined based on the above calculations shall be subject to the other adjustment provisions as provided for in Clauses 43, 47, 48, 49 and 51 of the General condition and deductions in accordance with Clause C7 of the Technical Specification.

C7 Payment Reductions

In accordance with the relevant clauses of the GC, Payment Reductions are applied in case of non-compliance with Service Level requirements.

Payment shall include provision for all costs associated with the management, administration, plant, equipment, labour and materials in keeping all asset items within the specified Response Code levels.

Where payment is made on a Lump Sum basis, the Contractor shall execute the work and perform its obligations under the Contract, and the sum payable by the Employer to the Contractor shall be the Lump Sum, adjusted by any additions or deductions made under the Contract.

Payment shall be made in equal monthly instalments in OM. Price Adjustment will be as per Clause 48 of Particular Conditions. The monthly instalments will be determined by dividing the OM Lump Sum for the Schedule 1 Item 1 divided by sixty (60) months (period of contract). These instalments are subject to deductions for the deletion of sections from OM responsibilities and for work not undertaken or not undertaken to the quality required.

The Maintenance Program Compliance Sheet (Appendix C) and the Non-Conformance Report (Appendix C) shall accompany the Contractor’s invoice for payment. Any works detailed in the subsequent Employer’s Memorandum not met within the final Response Time may be subject to a deduction on the monthly instalment.

The results of each formal inspection of the Service Levels and other performance criteria will be recorded by the Employer in the form of a Memorandum. The Memorandum will state the type and location of any non-compliance detected, in particular those non-compliances already shown in the standard tables provided by the Contractor as part of their monthly statement. For each individual case of non-compliance, the Employer will determine a date by which the Contractor must have completed the necessary measures in order to remedy the cause of the non-compliance. A follow-up site visit is therefore necessary at the date fixed by the Employer, or soon thereafter, in order to verify that the Contractor has indeed remedied the cause of non-compliance.
If at the date indicated in the Memorandum, the Contractor has not remedied the cause for non-compliance, independent of the reason given for their failure to do so, the Contractor is subject to Payment Reductions in accordance with the relevant clauses of the GC.

Payment Reductions are variable over time. If the Contractor fails to remedy a cause of non-compliance for which a payment reduction has already been applied, the amount of the payment reduction shall be doubled for that particular non-compliance every month until the non-compliance is corrected. On the successive fourth month if the non-compliance is not corrected, it shall be deemed a breach of Contract under Clause 59.2.2(c) of the General Conditions and the Contract shall be terminated.

The calculation of the initial amounts of payment reductions, and the formula for their adjustment over time, is to be based on the following rules:

There are three types of Payment Reductions on Ordinary Maintenance:

(i) Payment Reductions for non-compliance with Road User Service Comfort Measures and Durability (other than roughness): For any road or road section as specified in Section II of this document (Bid Data Sheet), the Employer may reduce the monthly lump-sum payment by the percentage of non-complying kilometers as determined by the Project Manager each month. The payment will therefore be the basic lump-sum multiplied by the ratio of length of complying road to the total length of the network as detailed in the following.

(a) Failure to achieve Response Time or stated quality.

Where the Contractor fails to complete Ordinary Maintenance works to the Intervention Criteria within the Response Time or quality specified, the Employer may deduct monies from payments due under the Contract. The amount of deduction shall be based on the Lump Sum bid in Schedule 1 – Item 1, proportioned by the quantity and percentages given in Table C6.1. An example of such deduction is shown in C7(i)(c) below. Deductions will continue to be made on a monthly basis until the work is satisfactorily completed. The minimum deduction for any item will be based on a per kilometre/month basis.

(b) Action by the Employer in the event of Non-Compliance in Standard Job activities.

The results of each formal inspection of the site and other performance criteria will be recorded by the Employer in the form of a Memorandum. The Memorandum will state the type and location of any non-compliance detected and in particular those non-compliances already provided by the Contractor as part of Maintenance Compliance Program Sheet (Form OM08). For each non-compliance the Employer will schedule a minimum of 7 days notice from the issue of the Memorandum for the Response Time to complete the non-compliance.

A follow-up site visit shall be arranged at the date fixed by the Employer in order to verify that the Contractor has remedied the cause of non-compliance.

If the Contractor has not remedied the cause for non-compliance at the date of the final Response Time indicated in the Memorandum, independent of the reason given by him for his failure to do so, a payment deduction may be made.
No deductions will be levied on the Contractor for failure to fully meet the maintenance intervention standards for period duration up to the defined in the individual activity group of the Technical Specifications, while the Contractor is establishing on site and setting maintenance routines. For subsequent monthly payments, deductions will be levied in accordance with the Contract provisions.

(c) Method for Payment Deduction

For the purpose of establishing cause for a payment deduction for non-compliance, each road is evaluated between kilometre stones. If kilometre stones have not been erected, a datum is established by the Employer from which even kilometre distances are measured. The minimum measurement for non-compliance is one (1) kilometre.

A monthly deduction is made when non-compliance for any Standard Job issued in the Memorandum from the Employer remains incomplete by the stated completion date as scheduled in the approved monthly Program. It is of no consequence whether the non-compliance for each Standard Job is a single defect or multiple defects within a set one kilometre distance; the full kilometre is said to be non-compliant for that Standard Job activity.

For each Standard Job activity, the deduction is calculated by the example below. The total deduction is the sum of individual Standard Job activity deductions.

The amount of the deduction shall not be repaid to the Contractor, even after the Contractor re-establishes the quality levels to the standards required by the Contract.

Example:

Sub Item OM101 – The length of the network less excluded sections is 100Km. 20km of pothole patching is identified in the monthly Program for repair within the month, based on the Contractor’s and Employer’s inspections. However at the end of the month being assessed, 15km of the total 20km had been repaired by the Contractor. 5 km had not been completed within the required Response Time.

Accordingly, the assessed deduction for non-compliance is:

\[
\text{Deduction} = \text{OM Lump Sum Bid (Schedule 1 Item 1)} \times \frac{1}{60} \text{ (per month)} \times 18\% \text{ (percentage applicable for potholes)} \times \frac{5\text{km}}{100\text{km}} \text{ (portion of road not compliant to the Service Level for this activity)}
\]

Deductions for all Standard Job activities are calculated similarly and totalled.

Payment reduction will be made in respect to road useability and non-provision of management requirements, for example, failure to provide the following; the Patrol Maintenance Unit, and program reports.

Deductions for all items shall be added to determine the total penalty to be applied to the Lump Sum.

If penalty exceeds the limits as stated in Clause 51.1 of the Particular Conditions, the Contractor will be in Fundamental Breach of the Contract can be terminated.

Table C6.1 Payment Deductions for incomplete Job Activities
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Standard Job Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Weighted Value %</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM101</td>
<td>Pothole Patching</td>
<td></td>
<td>Km</td>
<td>18</td>
</tr>
<tr>
<td>OM102</td>
<td>Regulation of Surface Depressions and Rut Patching</td>
<td></td>
<td>Km</td>
<td>6</td>
</tr>
<tr>
<td>OM103</td>
<td>Crack Sealing</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM104</td>
<td>Surface Treatment</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM105</td>
<td>Pavement Sweeping</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM106</td>
<td>Edge Repair</td>
<td></td>
<td>Km</td>
<td>10</td>
</tr>
<tr>
<td>OM107</td>
<td>Digout Repair &lt; 5 m²</td>
<td></td>
<td>Km</td>
<td>15</td>
</tr>
<tr>
<td>OM108</td>
<td>Repair of Concrete Pavement</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM201</td>
<td>Unsealed Shoulder Repair</td>
<td></td>
<td>Km</td>
<td>8</td>
</tr>
<tr>
<td>OM202</td>
<td>Unsealed Shoulder Power Grading</td>
<td></td>
<td>Km</td>
<td>3</td>
</tr>
<tr>
<td>OM203</td>
<td>Embankment and Batter Repair</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM301</td>
<td>Surface Drains Cleaning</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM302</td>
<td>Pipe, Culverts and Pits Cleaning</td>
<td></td>
<td>Km</td>
<td>4</td>
</tr>
<tr>
<td>OM303</td>
<td>Pipe, Culverts and Pit Repair</td>
<td></td>
<td>Km</td>
<td>3</td>
</tr>
<tr>
<td>OM304</td>
<td>River/Stream Maintenance</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM401</td>
<td>Grass Control Clearing and Grubbing</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM402</td>
<td>Tree and Shrub Trimming Management</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM501</td>
<td>Sign Maintenance</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM502</td>
<td>Guardstone/Guardrail Maintenance</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td>OM503</td>
<td>Distance Stones, Guideposts, Delineators and painted Tree</td>
<td></td>
<td>Km</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Maintenance and Hazard Markers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OM504</td>
<td>Footways</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM505</td>
<td>Roadmarking and Cats Eyes</td>
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<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM601</td>
<td>Bridge and Major Culvert Maintenance</td>
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<td>Km</td>
<td>3</td>
</tr>
<tr>
<td>OM701</td>
<td>Land Slip Clearing</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM702</td>
<td>Emergency Works and Services</td>
<td></td>
<td>Km</td>
<td>4</td>
</tr>
<tr>
<td>OM703</td>
<td>Vandalism Repair</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
<tr>
<td>OM704</td>
<td>Litter Control Road Obstructions &amp; Dead Animals</td>
<td></td>
<td>Km</td>
<td>1</td>
</tr>
</tbody>
</table>
(ii) **Payment Reductions for non-compliance with road usability criteria:** Calculated based on the provisions shown in section of the Technical Specifications. The amount of the reduction is to be deducted by the Employer from the monthly lump-sum payments due to the Contractor.

**CONDITIONS FOR APPLICATION OF PAYMENT REDUCTIONS**

**UNIT RATES FOR NON-COMPLIANCE**

- **Interruption of motorized traffic (light and/or heavy vehicles) anywhere along a new road or road section. Excluding exemptions.**
  - 2000 Rupees for each occurrence of non-compliance.

(iii) **Payment Reductions for non-compliance with Management Performance Measure:**

Calculated based on the provisions shown below. The amount of the reduction is to be deducted by the Employer from the monthly lump-sum payments due to the Contractor.

(a) Failure to provide minimum Patrol Maintenance Unit (PMU) resources

Further to Clause C2, where the Contractor fails to provide a fully operational PMU, the Employer will apply the following monthly deduction:

- Full day - Rs 1,000/- or Rs 200/- per hour if it is not a full day.

(b) Failure to conduct and submit the relevant Surveys/Inspections and submit reports (Initial/Milestone/Completion/Monthly) survey/Inspections in accordance with Part A of the Technical Specifications

- Full day delay – Rs 2000/-

(c) Failure to submit the Program of Performance (Contract Plan) in accordance with Clause A15 of the Technical Specifications

- Weekly penalty of Rs 1,000 shall apply until the Plan is presented.

(d) Failure to comply with Contract requirements (Quality, Environmental, Traffic Management, Emergency Response, etc.)

- Penalty of Rs 3,000 shall apply for each occurrence.

(e) Failure to engage / Provide Services of Road Manager up to 30 days

- Penalty of Rs.30,000/- for that particular month

(f) Failure to engage / Provide Services of Maintenance Engineer up to 30 days

- Penalty of Rs.25,000/- for that particular month

(g) Failure to engage / Provide Services of bituminous works Supervisor up to 30 days

- Penalty of Rs.20,000/- for that particular month

Compliance to environmental approvals as detailed in Section H Table H1 is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labor camp, exploring new borrow pit areas Quarry sites, bore wells and other water sources. Failure to meet the relevant requirement will be reported to the relevant Government Department.
NOTE: All deductions noted within this clause will not be reimbursable and will be treated as a deduction to the Contract.
Section V, Part D
Specifications for Initial Rectification Works

Part D Specifications for Initial Rectification Works

1. Initial Rectification Works
2. Initial Rectification Works under Lump Sum (Schedule 2)
3. Performance Criteria and Service Level
4. Procedure for Inspection and Payment
5. Payment Reduction and Liquidated Damages

D1 Initial Rectification Works

Initial Rectification Works are those activities that are beyond Ordinary Maintenance Activities, but not defined for Periodic Maintenance or Minor Improvement Works that are needed at the initial stage of the Contract to bring the road to below the required intervention standard.

The Contractor shall engage such additional resources necessary to complete the specified Initial Rectification Works. The Contractor shall not utilize resources specified in this Contract as being committed to Ordinary Maintenance activities.

D2 Initial Rectification Works under the Lump Sum (Schedule 2)

The Contractor is to make an independent estimate of the Initial Rectification Works which in his view are necessary to bring the roads to below intervention standards within initial rectification period and include the cost for those works in the item for Initial Rectification Works. Other works needed to bring roads up to the required service levels, which are beyond the scope of Ordinary Maintenance at the commencement of the project, but which are not included in the items, Initial Rectification, Periodic Maintenance Works and Minor Improvement Works, shall be included by the bidders in the lump sum price for Ordinary Maintenance Services. Contractors are solely responsible for estimating the type and quantity of Initial Rectification Works needed to meet the requirements of the contract.

In the initial stage, for the contractor to meet the service level compliance it will be necessary for the Contractor to undertake Initial Rectification Works for the repair of surface defects (raveling, stripping, de-laminations, rejuvenation of oxidized surface, fine hair cracking repair, etc.) in bitumen roads.

- All Pavement repairs using BM, SDBC to correct large areas of Roughness, Rutting, Depressions ,
- Application of Tack Coat for Pavement repairs.
- Repair minor dig Outs and Failed pavement sections,
- Apply 7mm Light Surface Sealing for slurry seal to correct cracks > 5mm,
- Applying 5mm Slurry Seal for cracks <5mm
- Supply & spreading of granular material for Unsealed shoulder repairs to correct edge drop off to carry roadside repairs,
- Clearing and Grubbing
- Remove Land Slips/Debries/Unsuitable soil.
- Edge repairs to correct edge breaks,
- Providing and constructing Coping, Plastering, Pointing, Apron, Masonry, Grouted Revetment and White washing for CD and structural works
- Application of road marking paints, fixing of road studs, sign boards, Kilometre stone, and boundary / guard/ Guide stone.

The Initial Rectification Works indicated above may not be interpreted as to be sufficient in order to assure compliance with any of the Service Levels required by the contract.

All assistance will be provided by the Employer to enable the Contractor to determine the proposed Initial Rectification Works (this will be essential for long term contracts). This will assist in the continual review and development of a program that suits the needs of the network to achieve service level Compliance.

The following estimated quantities for **Initial Rectification** Works is the Employer’s estimate to be able to achieve the desired Service Level for the entire road and has been provided as a Guide to assist the Contractor in determining his Lump Sum for Initial Rectification Works. Work locations have not been defined and the works to absorb the quantities below will need to be assessed by the Contractor, be programmed and completed within initial rectification period of start date.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description of Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td></td>
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<tr>
<td></td>
<td><strong>Repairs to for central carriage way:-</strong></td>
</tr>
<tr>
<td>a</td>
<td>Providing Tack Coat with Bitumen 80/100 grade/Emulsion as per MoRT&amp;H Specification 503</td>
</tr>
<tr>
<td>b</td>
<td>Semi-Dense Bituminous Concrete with 5% 60/70 grade bitumen to carry pavement repairs MoRT&amp;H Specification 508.</td>
</tr>
<tr>
<td>c</td>
<td>Bituminous Macadam with 3.3% 60/70 grade bitumen to carry pavement repairs as per MoRTH specification No. 504</td>
</tr>
<tr>
<td>e</td>
<td>Edge Repairs: MoRTH specification 406,407,501,503,504,508</td>
</tr>
<tr>
<td>f</td>
<td>Light surface sealing size 7mm bitumen 80/100 grade seal applied to surface treatment as directed by the Engineer-in-charge</td>
</tr>
<tr>
<td>g</td>
<td>Slurry seal to seal cracks, fill voids and minor depressions for thickness &lt;5mm as per MORTH Clause No.516 and as directed by the Engineer.</td>
</tr>
<tr>
<td>2.2</td>
<td><strong>Repairs to Berms and Shoulders:-</strong></td>
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<tr>
<td></td>
<td>Item Description</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>a</td>
<td>Gravel for Roadside repair - MoRT&amp;H Specification 305,407.</td>
</tr>
<tr>
<td>b</td>
<td>Removal of Land Slip Material/Debris/Unsuitable Soil and disposal at approved spoil sites up to 500 m</td>
</tr>
<tr>
<td>c</td>
<td>Earth work excavation in all soils by means of machinery</td>
</tr>
<tr>
<td></td>
<td><strong>2.3 Jungle clearance:</strong></td>
</tr>
<tr>
<td>a</td>
<td>Scrub Jungle / Light Jungle</td>
</tr>
<tr>
<td>b</td>
<td>Heavy Jungle</td>
</tr>
<tr>
<td></td>
<td><strong>2.4 Repairs to cross drainage works:</strong></td>
</tr>
<tr>
<td>a</td>
<td>Brick Masonry work in Cement mortar (1:6)</td>
</tr>
<tr>
<td>b</td>
<td>Providing Random Rubble Masonry work in cement mortar (1:6) as per MORTH specifications No.1400 &amp; 2200</td>
</tr>
<tr>
<td>c</td>
<td>Plastering in CM (1:4) 20 mm thickas per Morth 1300 and 1200</td>
</tr>
<tr>
<td>d</td>
<td>Pointing with Cement Mortar (1:4) - MoRTH specification 1300 and 2200</td>
</tr>
<tr>
<td>e</td>
<td>White Washing two coats to Cross drainage/Trees/Walls/Structures, etc as directed by Engineer</td>
</tr>
<tr>
<td>f</td>
<td>Providing Grouted pitching with rough stone (HBG) - MoRTH Specification No.2504</td>
</tr>
<tr>
<td>g</td>
<td>Cement Concrete (1:3:6)</td>
</tr>
<tr>
<td>h</td>
<td>Cement Concrete M15 grade</td>
</tr>
<tr>
<td>i</td>
<td>Painting two coats with synthetic e</td>
</tr>
<tr>
<td>j</td>
<td>Revetment with Rough stone</td>
</tr>
<tr>
<td></td>
<td><strong>2.5 Road Furniture</strong></td>
</tr>
<tr>
<td>a</td>
<td>Fixing new Kilometer (KM) Stones as per MORTH Clause No.804</td>
</tr>
</tbody>
</table>
### 2.6 CENTRE LINE MARKING with Hot Applied Thermoplastic and fixing of studs

#### a
Thermoplastic road marking as per MoRTH specification No.803
- i) centre line marking 3.00 m length and 10 cm width with a gap of 4.5 m as per IRC: 35.
- ii) Edge painting and curve painting (continuous) as per IRC : 35

#### b
Fixing of studs

Any additional activities the bidder considers necessary to achieve the service level objective

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These Initial Rectification Works and quantities indicated above are indicative as determined by the Employer and should not be interpreted as the contractual requirement for these activities. The contractor will need to assess the current road conditions and determine what works are needed to meet the intervention criteria service levels within milestone period.

All works and materials are to be in accordance with the relevant sections as defined in Section V, Part B of this Technical specification Rectification of stream bed upstream and downstream of 10m preferably with PCC

### D3 Performance Criteria and Service Level

There is no individual Performance Criteria and Service level requirement for Initial Rectification Works. The Initial Rectification Works is for the purpose of assisting the Contractor to bring the road up to the required intervention standard within initial rectification period of the start date. **However the performance criteria and service level requirement for the ordinary maintenance as specified in part C will be applicable to Initial Rectification works.** Failure to bring the road below intervention standard by the stated time period will result in Payment Reductions in the Ordinary Maintenance Lump Sum after the Initial Rectification Works completion date.
On completion of the Initial Rectification Works the Contractor is to maintain the road under Ordinary Maintenance.

D4 Procedures for Inspection and Payment

Payment for the Initial Rectification shall be made at the scheduled rate as measured on site and agreed with the Employer up to the limit of the Lump Sum in the Contractors Bid. Where requested by the Employer, the Contractor must verify both in quantity and quality that the quantities of the works stated have been completed.

Payment for Items shall be in accordance to compliance with Part B of the Technical Specifications and the relevant clauses of MoRTH

D5 Payment Reduction and Liquidated Damages

For failure to complete the work in the specified time period in accordance Clause 39 the Liquidated Damages shall be imposed in accordance to Clause 39.3 of the Particular Conditions.
Section V, Part E
Specifications for Periodic Maintenance Works

Part E Specifications for Periodic Maintenance Works
1. Periodic Maintenance Works to be carried out by Contractor
2. Periodic Maintenance Works under Lump Sum (Schedule 3)
3. Performance Criteria
4. Service Level
5. Procedure for Inspection and Payment
6. Payment Reduction and Liquidated Damages

E1 Periodic Maintenance Works

Periodic Maintenance works are the pavement resurfacing activities (SDBC t overlay) that are beyond Ordinary Maintenance Activities. On completion of the Initial Rectification Works to get the road to the desired Service Level, the Contractor shall commence applying surface treatment (SDBC asphalt overlay). Within the first 4 years of the Contract, the Contractor is to apply the surface treatment over the entire road except for the road sections under defect liability defined in Section V Part A7(ii) of this Technical Specification.

The Contractor is to make an independent estimate of the Periodic Maintenance Works which in his view are necessary to bring the roads to the required service level (Roughness Index) at the required milestones, and include the cost for those works in the item for Periodic Maintenance Works. The Lump sum is to include allowance for the application of not less than 25mm SDBC wearing course for the Structural Overlay sections defined in Section V Part F Minor Improvement Work. The wearing course activity shall be paid on a unit lane kilometres.

The Contractor shall conduct all necessary corrective works under Initial Rectification or Ordinary Maintenance in preparation of the resurfacing. Prior to commencement of an overlay, the Contractor is to notify the Employer of the impending commencement of the Works for inspection in accordance with Clause 20 of the General Conditions. In addition to the specified minimum depth, the Contractor is to ensure Camber correction is made for a cross fall of 2.5% on the finished surface.

The Contractor shall engage such additional resources necessary to complete the specified Periodic Maintenance works. The Contractor shall not utilize resources specified in this Contract as being committed to Ordinary Maintenance activities.

E2 Periodic Maintenance Works under Lump Sum (Schedule 3)

All Periodic Maintenance works shall be completed year wise within the first 4 years of the Contract period. The work shall be divided throughout this time period and for no single year, the periodic quantity shall exceed 35% of the value of the Total Periodical Maintenance Quantity.

As a guide to assist the Contractor in his bid, the following is the Employers estimate of the amount of Bituminous Wearing Course anticipated for each year of the Periodic Maintenance.

<table>
<thead>
<tr>
<th>Year</th>
<th>Approximate</th>
<th>Year</th>
<th>Approximate</th>
<th>Year</th>
<th>Approximate</th>
<th>Year</th>
<th>Approximate</th>
</tr>
</thead>
</table>


Further, to assist the Contractor, a list of Year 1 to 4 sections has been prepared by the Employer for each road using current road condition data collected by the Employer. The list has been inserted below as a guide to assist the Contractor in selecting his final list of road sections to have an Bituminous Wearing Course to meet the set service level Compliance for each road. This quantity includes also the requirement for camber correction. The list includes the application of 25mm SDBC wearing course for the Structural Overlay sections defined in Section V Part F Minor Improvement Work.

<table>
<thead>
<tr>
<th>Year</th>
<th>Length of Single lane in Kms.</th>
<th>Length of Intermediate lane in Kms.</th>
<th>Length of Double lane in Kms.</th>
<th>Length of Multilane (width &gt; 7.0 m) in Kms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>......</td>
<td>......</td>
<td>......</td>
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<tr>
<td>2</td>
<td>......</td>
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<td>3</td>
<td>......</td>
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<tr>
<td>4</td>
<td>......</td>
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<tr>
<td>Total</td>
<td>......</td>
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</tbody>
</table>

Further, to assist the Contractor, a list of Year 1 to 4 sections has been prepared by the Employer for each road using current road condition data collected by the Employer. The list has been inserted below as a guide to assist the Contractor in selecting his final list of road sections to have an Bituminous Wearing Course to meet the set service level Compliance for each road. This quantity includes also the requirement for camber correction. The list includes the application of 25mm SDBC wearing course for the Structural Overlay sections defined in Section V Part F Minor Improvement Work.

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Location</th>
<th>Recommended Treatment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start (KM)</td>
<td>End (KM)</td>
</tr>
</tbody>
</table>

First Year

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |

<p>|           | 25mm thick SDBC with Tack Coat | 25mm thick SDBC with Tack Coat |</p>
<table>
<thead>
<tr>
<th></th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
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<tbody>
<tr>
<td><strong>Total Length for 1st Year Treatment</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Second Year</strong></td>
<td>25mm thick SDBC with Tack Coat</td>
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<tr>
<td><strong>Total Length for 2nd Year Treatment</strong></td>
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<td><strong>Third Year</strong></td>
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</table>

**Total Length for 3rd Year Treatment**

**Fourth Year**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>25mm thick SDBC with Tack Coat</th>
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<tbody>
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</tbody>
</table>
### E3 Performance Criteria

The performance Criteria for Periodic Maintenance is Roughness. Roughness Service Levels compliance is to be assessed using a Bump Integrator or similar equipment.

### E4 Service Levels

The Contractor is responsible for ensuring that the road roughness is below the threshold values given in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Service Level</th>
<th>Measurement/Detection</th>
<th>Time allowed for repairs or tolerance permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum IRI for any one-km section of existing pavement</td>
<td>Average value for any one-km road section must be less than the threshold value given below (in IRI average) 4500 IRI</td>
<td>Measured with calibrated equipment (Bump Integrator).</td>
<td>No tolerance allowed.</td>
</tr>
<tr>
<td>Average Pavement roughness for entire road</td>
<td>Average value for entire road or road section must be less than the threshold value given below (in IRI average) 4000 IRI</td>
<td>Measured with calibrated equipment (Bump Integrator).</td>
<td>No tolerance allowed.</td>
</tr>
</tbody>
</table>
Maximum IRI for any length of a pavement upon receiving periodical renewal

<table>
<thead>
<tr>
<th>Maximum IRI for any one-km road section must be less than the threshold value given below (in IRI average)</th>
<th>Measured with calibrated equipment (Bump Integrator).</th>
<th>No tolerance allowed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3500 IRI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maximum IRI for any one-km section of existing pavement Completion report ( exit criteria )

<table>
<thead>
<tr>
<th>Average value for any one-km road section must be less than the threshold value given below (in IRI average)</th>
<th>Measured with calibrated equipment (Bump Integrator).</th>
<th>No tolerance allowed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000 IRI</td>
<td></td>
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</tbody>
</table>

E5 Procedures for Inspection and Payment

The Roughness is to be measured at the beginning of the Contract as part of the Initial Road Condition Report to confirm the sections that do not meet these Service Level criteria. On completion of the Initial Rectification, Periodic Maintenance Works and Minor Improvement Works at the end of year 1 the roughness shall be taken as part of the Milestone Report.

If the measurement reveals that the road roughness is above the Service Level, the Employer will establish a time frame for the Contractor to take the measures necessary to correct the non-conformance. That time frame should normally ensure that the corresponding works are completed within four months. The Employer may however grant a longer period if, in the opinion of the Employer the circumstances warrant such longer period. Upon completion of the non conforming section the relevant section roughness shall be measured again to confirm compliance. Liquidated Damages shall apply after the granted date until the non-conformance has been corrected.

A further measurement shall occur in the first 3 months of year 5 as part of the completion report. The contractor will be required to correct any non-conformances and re measure prior to the Completion of the Contract. If the any section of the road does not meet the Service Level prior to the end of the Contract, Liquidated damaged shall apply in accordance to Clause 40.3 for the General Conditions.

E6 Payment Reduction and Liquidated Damages

For failure to complete the work in the specified time period in accordance Clause 39 the Liquidated Damages shall be imposed in accordance to Clause 39.3 of the Particular Conditions.

For non-compliance with the Performance Requirement on road roughness and 25 mm layer thickness at the measurement in accordance to Clause 40 of the General Conditions, the contractor can correct the non compliance at his own cost for retesting within the timeframe agreed with the Employer or pay Liquidated Damages as detailed in Clause 40.3 of the Particular Conditions.
Section V, Part F
Specifications for Minor Improvement Works

List of Contents

Part F Specifications for Minor Improvement Works
1. Minor Improvement Works to be carried out by Contractor
2. Description of Minor Improvement Works
3. List of Documents Related to Minor Improvement Works for Approval & review
4. Payment for Minor Improvement Works
5. Measurement
6. Quality Requirements
7. Service Level Performance
8. Payment Reduction and Liquidated Damages

F1 Minor Improvement Works to be carried out by Contractor

For the Contractor in the initial stage of the contract period to meet the service level compliance it will be necessary to undertake sections of improvement works for the repair of the bitumen roads. The Minor Improvement Work defined is for Major Dig-outs with new pavement, and Structural Overlays, Profile correction, Reconstruction of Pipe culverts etc.

F2 Description of Minor Improvement Works

The contractor will have to carry out the following Minor Improvement Works:

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Location</th>
<th>Recommended Treatment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>............</td>
<td>Start</td>
<td>End</td>
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</tbody>
</table>
The quantities for the above Minor Improvement Works are detailed in Schedule 4 and shall be used for conformity for assessing the bid. Where requested by the Employer, the Contractor must verify both in quantity and quality that the quantities of works stated below have been completed.

These Minor Improvement Works indicated above should not be interpreted as to be sufficient in order to initiate compliance with any of the Service Levels required by the contract. The contractor will need to assess the current road conditions and determine what works are needed to meet the timetables for service level compliance.
F3 List of Documents Related to Minor Improvement Works for Approval or Review

The following documents are specified in accordance with sub-clause 8.4.1 of the GC:

For Approval
- Any recommended or innovative treatments that differ from the standards included in the General Specification.

For Review
- Quality of materials used in the works
- Design for bituminous concrete
- Linear diagrams of all completed road surfacing and Minor Improvement Works
- Drawings and as built plans for structures, culverts, retaining and breast walls, parapets, etc.
- Details and location of all new road signs, distance markers or other road utilities

F4 Payment for Minor Improvement Works

The Minor Improvement Works indicated above will be remunerated based on the unit prices shown in the Schedule of Prices. The Contractor will invoice Minor Improvement Works as part of the Monthly Statements and in accordance with the Minor Improvement Works actually carried out as approved by the Employer and measured by unit price as stated in the Schedule of Prices.

F5 Measurement

Where material is to be measured by volume it shall be measured in cubic meters. The Contractor shall measure and document the volume of all materials supplied under the Contract in accordance with the Specification and the Contractor’s Contract Quality Plan.

Further, the Contractor shall provide, on request by the Employer, objective evidence to the ongoing verification of the accuracy of the thickness of bituminous overlay.

Payment under this item will include full compensation for all labour, plant, and materials used in meeting the specified requirements. Failure to carryout the works in the time specified will result in the Contractor being liable for liquidated damages.

Payment for this work is to cover all necessary preparation, tack coat, ancillary works, building up the shoulders to match the new pavement edge level, sign poles and any other works not specially mentioned necessary to carryout this work.

F6 Quality Requirements

If any sub-standard work is identified by the Contractor or the Employer during inspection, action will be taken to correct the sub-standard work in accordance with Clause 20.6 of the General Conditions. Failure to correct the work shall result in non payment for the identified item.

SDBC/BM/DBM Bituminous items:

a) Thickness:
The average thickness shall not be less than 25 mm for SDBC, 50 mm for BM layer.

F7 Service Level performance

To ensure that the new pavement meet final roughness requirements. Roughness Service Levels compliance is to be assessed using a Bump Integrator or similar equipment.

The Employer owns a Bump Integrator and survey vehicle suitable for carrying out the roughness survey. The Contractor is encouraged to arrange to hire the vehicle with driver, as necessary, to under take the survey under the supervision of the Employer.

The Contractor is responsible for ensuring that the road roughness is below the threshold values given in the table below:

The threshold value is the maximum allowed average for any new pavement constructed as part of the major dig outs works and any structural overlayed pavement sections defined under Minor Improvement Works.

The tighter measurements are to ensure that the roughness measurement is within the overall limits at the end of the Contract.

<table>
<thead>
<tr>
<th>Item</th>
<th>Service Level</th>
<th>Measurement/Detection</th>
<th>Time allowed for repairs or tolerance permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum IRI for any length of pavement under Minor Improvement</td>
<td>Average value for any one-km road section must be less than the threshold value given below (in IRI average)</td>
<td>Measured with calibrated equipment (Bump Integrator).</td>
<td>No tolerance allowed.</td>
</tr>
<tr>
<td></td>
<td>2000 IRI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On completion of the Minor Improvement Works and 1st year Periodic Maintenance Works defined in Section V Part D, at the end of year 1 the roughness shall be taken as part of the Milestone Report. If the measurement reveals that the road roughness is above the Service Level, the Employer will establish a time frame for the Contractor to take the measures necessary to correct the non-conformance. That time frame should normally ensure that the corresponding works are completed within four months. The Employer may however grant a longer period if, in the opinion of the Employer, the circumstances warrant such longer period. Upon completion of the non conforming section the relevant section roughness shall be measured again to confirm compliance. Liquidated Damages shall apply after the granted date until the non-conformance has been corrected.
F8 Payment Reduction and Liquidated Damages For failure to complete the work in the specified time period in accordance Clause 39 the Liquidated Damages shall be imposed in accordance to Clause 39.3 of the Particular Conditions. For non-compliance with the Performance Requirement on road roughness at the Milestone measurement in accordance to Clause 40.3, the contractor can correct the non compliance at his own cost for retesting within the timeframe agreed with the Employer or pay Liquidated Damages as detailed in Clause 40.3 of the Particular Conditions.
Section V, Part G Specifications for Emergency Works

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<table>
<thead>
<tr>
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</tr>
</thead>
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</tr>
<tr>
<td>2. Procedure for requesting Emergency Works</td>
</tr>
<tr>
<td>3. Remuneration of Emergency Works</td>
</tr>
<tr>
<td>4. Provision for Emergency Works</td>
</tr>
<tr>
<td>5. Obligations of Contractor during Emergencies and Emergency Works</td>
</tr>
<tr>
<td>6. Minor repairs made necessary by “Unforeseen Natural Phenomena”</td>
</tr>
</tbody>
</table>

G1. Definition of “Unforeseen Natural Phenomena”

Emergency Works are designed to repair those damages to the roads under contract which are caused directly by unforeseen natural phenomena with imponderable consequences, due to the reasons beyond the control of contractor occurring either in the area of the roads or elsewhere, but with a direct impact on the roads. “Unforeseen Natural Phenomena” are defined as follows:

(i) Flooding where water levels rise above the crown level of the road resulting in complete or partial washout of the culvert or road embankment causing disruption of traffic. Any damage which results from insufficient maintenance of drainage structures will not be considered as “emergency” and will need to be repaired from within the Ordinary Maintenance Services.

(ii) Major landslides (greater than 50 m$^3$) which block the road carriageway and drains, encroach onto the road surface and interrupts the flow of traffic or is unsafe. Can be caused by heavy rains or earthquakes. Landslides within the right-of-way caused by overflow of poorly maintained cut-off drains or catch dams will not be considered as an “emergency” and will need to be removed as part of Ordinary Maintenance Services.

(iii) Traffic accidents which interrupts traffic and causes insurmountable damage to the road. Nevertheless, the Contractor will be responsible to provide full support to the police and road users and arrange signing and cleanup of site or sanding as necessary is part of Ordinary Maintenance Services.

(iv) Due to the reasons beyond the control of contractor in routine maintenance of road under contract conditions like continuous/ incessant rains, other events listed in the clause 38.1 of General Conditions, etc.,

G2. Procedure for Requesting Emergency Works

If damages clearly caused by “Unforeseen Natural Phenomena” result in a reduction of Service Levels below the normal threshold values specified in this contract, the Contractor may make a formal request to the Employer to carry out Emergency Works designed specifically to remedy those damages. If the Contractor decides to make a request for Emergency Works, he must (i) immediately inform the Employer of his intention to do so, by telephone, radio or other means, (ii) document the circumstances of the Force Majeure event and the damages caused, through photographs, video and other suitable means, (iii) prepare a written request, stating the type of works he intends to carry out, their exact location and the estimated quantities and costs, including photographic documentation. In any case, a request for Emergency Works must be
made immediately after the Contractor gains knowledge of the existence of damages caused by “Unforeseen Natural Phenomena”.

The Employer, upon receipt of the request and not later than 24 hours thereafter, will evaluate the request made by the Contractor based on a site visit, and issue an order to carry out the Emergency Works. The order will specify the type of works, their estimated quantities, the remuneration to be paid to the Contractor, and the time allowed for their execution. The order may indicate a requirement for an engineering/geotechnical assessment of the options for the permanent repairs to the site.

G3. Remuneration of Emergency Works

Emergency works are remunerated by the Employer from the provisional sum for each work order established on the basis of executed quantities at the unit prices covered under Schedule 4 for similar items and for other items the unit prices shall be based on the SOR available just before the execution of work arrived as per Clause 61 and 63 of General Conditions of Contract.

In the event of unforeseen events, works shall be conducted as Emergency Works (Dayworks). These Works shall be undertaken under Dayworks only where formally approved by the Employer. Works carried out under Dayworks shall be for minor items of works which are not within the scope of Schedule 1, 2, 3 or 4 activities. The Contractor shall maintain detailed records for the items of plant or materials utilised under Dayworks and shall obtain the Employer’s Representative endorsement of the site dockets to verify times and quantities used.

In emergency incidents, where the emergency work is beyond the scope of OM responsibilities and not listed in the schedule, the Contractor shall provide the Employer a full listing of costs in accordance with the rates tendered in work Schedule 4. Once the site has been made safe, the Contractor is not to proceed with remedial works until the approval of the Employer is received.

G4. Provision for Emergency Works

The total contract amount will include a provisional sum of Emergency Works during the contract period. The actual payments for Emergency Work will be based on the actual quantities executed.

G5. Obligations of Contractor during Emergencies and Emergency Works

Given the nature of this contract and the fact that Emergency Works are remunerated separately, the Contractor will, during the execution of Emergency Works, continue to be responsible for assuring the normal Service Levels on all roads included in the contract. In particular, the Contractor will do everything reasonably possible in order to ensure the normal use of all the roads under contract, including the sections affected by emergencies.

If road traffic has been interrupted because of an emergency, the Contractor will take the measures necessary (i) to reopen the road to traffic in the shortest time possible, and (ii) maintain the road open during emergency works, without being entitled to a specific compensation for those measures. This is valid specifically for trees or other objects which may have fallen on the road, damage to access ramps to bridges, erosion of embankments, collapse of slopes, traffic accidents, flooding, Rectification of natural streams for damages caused due to flood etc.
G6. Minor repairs made necessary by “Unforeseen Natural Phenomena”

If the works necessary to remedy damages caused by an “Unforeseen Natural Phenomena” are below certain threshold values, the Contractor will carry out those works as part of his normal obligations and without having the right to invoke the provision of the contract concerning emergencies and the remuneration of emergency works. In these cases the consent of the Employer is not needed and the Contractor will simply carry out the works on his own initiative. He will nevertheless inform the Employer of the damages occurred and the remedial measures taken.

The threshold values for minor repairs are as shown in the table below:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Unit</th>
<th>Threshold Quantity per emergency event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slides of material onto road</td>
<td>m³</td>
<td>50</td>
</tr>
<tr>
<td>Culverts</td>
<td>Number</td>
<td>1</td>
</tr>
<tr>
<td>Bituminous concrete</td>
<td>m³</td>
<td>20</td>
</tr>
<tr>
<td>Base course</td>
<td>m³</td>
<td>50</td>
</tr>
<tr>
<td>Concrete</td>
<td>m³</td>
<td>5</td>
</tr>
<tr>
<td>Embankment</td>
<td>m³</td>
<td>50</td>
</tr>
</tbody>
</table>
Section V - Part H

Environmental Requirement

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Part H Environmental Specification

1. General
2. Construction camp and Workers Camp
3. Establishing Construction Plant
4. Quarry Operations
5. Borrowing of Earth
6. Soil Erosion and Sedimentation Control
7. Substance Hazards to Health
8. Fuel and Chemical Storage
9. Water Quality
10. Air Quality
11. Noise
12. Flora and Fauna
13. First Aid Facilities
14. Transmission of Disease
15. Conservation of Religious Structures and Shrines
16. Preservation of Archeological Assets and Antiquities
17. Environmental Enhancement
18. Management of Waste Materials
19. Road Encroachments
20. Labor
21. Workers Accident Risks
22. Reinstate the Land
23. Contractors Checklist
24. Legislative Permits/Approvals

The “Environmental Management Framework” (EMF) has been prepared for Contracts under OPRMC. Part H is to be read in conjunction with the EMF, which is available at the Employer’s office by request. The Contractor’s checklist is also prepared and given in Appendix F.1, which is to be submitted to the Employer and serves as basis for complying with safeguard measures to be implemented by the Contractor and monitored by the Employer. The Environmental Management Action Plan (EMAP) of EMF is also given in Appendix F.2, which shall be read in conjunction with the environmental specification. Appendix F.3 gives Environmental Sensitive Areas through which works shall not proceed without clearance from the Employer.

H1 General

The Contractor shall be required to take all necessary measures and precautions and otherwise ensure that the execution of the works and all associated operations on-site or off-site are carried
out in conformity with the statutory and regulatory environmental requirements including those prescribed in the EMF and elsewhere in this document.

The Contractor shall take all the measures and precautions to avoid any nuisance or disturbance arising from the execution of the works. This shall, wherever possible be achieved by suppression of the nuisance at source rather than abatement of the nuisance once generated. The provisions of this sub-clause shall however, be disregarded in respect of emergencies required for saving life or for the safety of the works.

In the event of any spoil or debris or silt from the sites being deposited on adjacent lands, the Contractor shall immediately remove such spoils, debris or silt and restore the affected area to its original state to the satisfaction of the Employer.

Surplus excavation materials and topsoil shall, wherever possible, be used to reinstate quarries or borrow pits or other areas as may be approved by the Employer. Such materials should be spread in such a manner as to limit subsequent erosion and shall be re-vegetated as existing ground cover dictates. Restoration of borrow pits and quarries shall be undertaken in an appropriate time frame to avoid formation of cess pools and other environmental hazards.

Contractor shall comply with the requirements of various environmental statutes, as may be applicable, some of which are mentioned below:

- Environment (Protection) Act, 1986, and as amended
- Water (Prevention and Control of Pollution) Act, 1974, and as amended
- Air (Prevention and Control of Pollution) Act, 1981, and as amended
- Noise Pollution (Control and Regulation) Rules, 2000, and as amended
- Hazardous Waste (Management and Handling) Rules
- The Wildlife (Protection) Act, 1972, and as amended
- Forest Conservation Act, 1980, and as amended
- Motor Vehicle Rules, 1989, and as amended
- Public Liability Insurance Act, 1991, and as amended
- National Environmental Tribunal Act, 1995, and as amended
- National Environment Appellate Authority Act, 1997, and as amended
- Contract Labour (Regulation and Abolition) Act 1970, and as amended
- Workmen Compensation Act 1923, and as amended
- The Factories Act 1948, and as amended
- The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996, and as amended
- Child Labour (Prohibition and Regulation) Act 1986, and as amended
- Inter-State Migrant Workmen’s (Regulation of Employment and Conditions of Service) Act 1979

**H2 Construction Camp and Workers Camp**

Unless otherwise specified the Contractor is at liberty to make his own arrangements with landowners to establish construction camps and workers camp. Prior to the development of such camps the Contractor shall submit to the Employer the signed authority of the landowner for the Contractor to establish the construction camp on any land. Location of such camp shall be 1.5 km from boundaries of designated Reserved Forests, Sanctuary or National Park, 1.5 km from river, stream and lake and 500 m from ponds, 250 m from the boundary of State and National highways and 1.5 km from the nearest habitation.

The Contractor shall also submit to the **Employer** the following information signed by the landowner and the Contractor:

- Present land use category
- details of compensation to be paid,
- agreed period of tenure,
- any specific requirements of the landowner,
- photographs of the site in its original condition, and
- details of proposed and agreed site restoration plan after completion of the project works.

Contractor shall provide and maintain proper sanitation and adequate water supply facilities including potable drinking water at his own cost to the workers. All camp facilities shall be maintained in a safe clean and or appropriate condition throughout the construction period.

The Contractor shall provide, equip, and maintain adequate first aid facilities and erect conspicuous notice boards directing where these are situated and provide all required transport. The Contractor shall comply with the government medical or labour requirements at all times and provide, equip and maintain first aid centre where directed and at all times have experienced first aid personnel available throughout the works for attending injuries.

At the completion of construction, all construction camp facilities shall be dismantled and removed from the site. The site shall be restored to a condition in no way inferior to the condition prior to commencement of the works. Various activities to be carried out for site rehabilitation include:

- Oil and fuel contaminated soil shall be disposed of in a deep trench as given in Sl. No. C4 of EMAP (Appendix F.2).
- Soak pits, septic tanks shall be covered and effectively sealed off.
- Debris (rejected material) should be disposed off suitably (refer Appendix 11 of EMF for detailed guideline).
- Ramps created should be levelled.
- Underground water tank in a barren/non-agricultural land can be covered. However, in an agriculture land, the tank shall be removed.
- If the construction camp site is on an agricultural land, top soil can be spread so as to aid faster rejuvenation. Proper documentation of rehabilitation site is necessary. This shall include the following:
  - Photograph of rehabilitated site;
- Land owner consent letter for satisfaction in measures taken for rehabilitation of site;
- Certification from Employer or delegated Representative.

In cases where the construction camps site is located on a private land holding, the contractor would still have to restore the campsite as per this guideline. The rehabilitation is mandatory and should be include in the agreement with the landowner by the contractor. Also, he would have to obtain a certificate for satisfaction from the landowner. If such a statement is not submitted, the Employer may withhold payment as per the payment deduction summary for Contract given in C7(iii) of the Technical Specifications.

H3. Establishing construction plants (Hot mix plant, Crusher, DG sets etc.)

All material from bituminous work shall be sourced from Hot Mix Plants (HMP), road side pan boiling of bitumen shall not carried out. If absolutely necessary, with the Employer’s approval, mobile hot mixer with hood may be used at least 1.5 km from the nearest habitation in the cross wind direction.

During the establishment of the construction plant the Contractor shall submit the Consent for Establishment (CFE) from BSPCB to the Employer. Location of construction plant shall be 1.5 km away from settlement, school, hospital on downwind directions, 1.5 km from any archaeological site, 1.5 km from ecologically sensitive areas i.e. forest, national park, sanctuary etc., 1.5 km from rivers, streams and lakes, 500 m from ponds, 500 m from National Highway, 250 m from State Highway, 100 m from District roads and other roads (The distance are to be measured from edge of Road to boundary of site), away from agricultural land and preference to barren land. Complying all relevant provisions of the Factories Act, 1948 and the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996.

H4. Quarry Operations

The Contractor shall obtain materials from licensed and Government approved quarries. In case of opening new quarry the Contractor shall obtain materials only after obtaining necessary license and lease deed from Mining Department, District Administration and Forest Department etc., as shall be applicable. Copy of such permission shall be submitted to the Employer. The quarry operation shall be undertaken within the purview of the rules and regulations in force.

Quarry Operations and Management (if new quarries are opened)
- New quarry shall be at least 1.5 km away from the settlement, forest and other ecologically sensitive areas;
- Quarry shall be away from water body;
- Contractor shall estimate water requirement for dust suppression at quarry sites during operation and for water spraying on kutchha (non-metal) haul road and ensure availability of water by identifying sources and obtaining necessary permission;
- Contractor shall prepare quarry sites operation and redevelopment plan considering surrounding land uses, local needs and agreement with the landowner;
- Only licensed blaster i.e. short-firer certificate holder will be responsible for quarry blasting;
- Permits for transportation, storage and use of explosive, as will be required, shall be obtained from the Controller of Explosive;
- Overburden shall be removed and disposed as per Appendix 10 of EMF;
In case of blasting, the procedure and safety measures shall be taken as per The Explosive Rules, 1983;
The Contractor shall ensure that all workers related safety measures shall be taken; quarry operation will be undertaken in stages with adequate benching; and
Redeveloping the area within 2 weeks (or as will be agreed upon) of completion of quarry material collection.

H4.1 Use of Explosive for Blasting

The Contractor shall adopt any method or methods of blasting consistent with the safety and job requirements. Prior to starting any phase of the operation the Contractor shall provide information describing pertinent blasting procedures, dimension and notes.

The magazine for the storage of explosives shall be built as per national / international standards and located at the approved site. No unauthorized person shall be admitted into the magazine which when not in use shall be kept securely locked. No matches or inflammable material shall be allowed in the magazine. The magazine shall have an effective lightning conductor. The following shall be displayed in the lobby of the magazine:

- A copy of the relevant rules regarding safe storage in English and in the language with which the workers concerned are familiar.
- A statement of up-to-date stock in the magazine.
- A certificate showing the last date of testing of the lightning conductor.
- A notice that smoking is strictly prohibited.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided to the satisfaction of the Engineer in charge and in general not closer than 300 m from the road or from any building or camping area or place of human occupancy. In addition to these, the Contractor shall also observe the following instructions and any further additional instructions which may be given by the Employer and shall be responsible for damage to property and any accident which may occur to workmen or the public on account of any operations connected with the storage, handling or use of explosives and blasting.

H4.2 Blasting Operations

The blasting shall be carried out during fixed hours of the day preferably during the mid-day luncheon hour or at the close of the work as ordered in writing by the Employer. The hours shall be made known to the people in the vicinity. All the charges shall be prepared by the man in charge only.

The Contractor shall notify each public utility company having structures in proximity to the site of the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to take such steps as they may deem necessary to protect their property from injury. In advance of any blasting work within 50 m of any railway track or structures, the Contractor shall notify the concerned Railway Authority of the location, date, time and approximate duration of such blasting operations.
Red danger flags shall be displayed prominently in all directions during the blasting operations. The flags shall be planted 200 m and 500 m from the blasting site in all directions for blasting at work site and quarry, respectively. People, except those who actually light the fuse, shall be prohibited from entering this area, and all persons including workmen shall be excluded from the flagged area at least 10 minutes before the firing, a warning siren being sounded for the purpose.

**H5. Borrowing of Earth (in case of opening of new borrow areas)**

**H5.1 Borrow Area Selection**

Borrowing within the ROW is prohibited under this contract. However, earth available from excavation for roadside drains as per design, may be used as embankment material (if necessary and applicable), subject to approval of the Employer, with respect to acceptability of material.

Borrowing to be avoided on the following areas:

- For land close to toe line, the minimum distance shall be 30m distance from ROW and 5 m from toe of embankment, whichever is higher.
- Irrigated agricultural lands (In case of necessity for borrowing from such lands, the topsoil shall be preserved in stockpiles.
- Land within 1km of settlements.
- Environmentally sensitive areas such as Reserve Forests, Protected Forests, Sanctuary, wetlands. Minimum distance of 1.5 km should be maintained from such areas.
- Unstable hill-sides.
- Water-bodies (only if permitted by the local authority, and with specific re-development plans approved by the Employer)
- Areas known to support rare plant/ animal species;
- Adequate drainage system shall be provided to prevent the flooding of the excavated area.
- At the stockpiling locations, the Contractor shall construct sediment barriers to prevent the erosion of excavated material due to runoff.
- During excavation slopes shall be 1:1 or 2H:1V to prevent their sliding.

**H5.2 Documentation of Borrow Pit**

The contractor must ensure that following data base must be documented for each identified borrow areas before commencing the borrowing activity that provide the basis of the redevelopment plan.

- Chainage along with offset distance;
- Area (Sq.m);
- Photograph and borrow pit from all sides;
- Type of access/width/kutcha/pucca etc from the carriageway;
- Soil type, Slope/drainage characteristics;
- Water table of the area or identify from the nearest well, etc;
- Existing land use, for example barren/agricultural/grazing land;
- Location/name/population of the nearest settlement from borrow area;
- Quantity excavated (likely and actual) and its use;
- Copy of agreement with owner/government; and

Borrow areas shall be redeveloped based on terrain, surrounding land use and local needs, such as agriculture land, water tank, plantation etc. Rehabilitation certificate from the land owner along with at least four photograph of the rehabilitated site from different angles.

**H6. Soil Erosion and Sedimentation Control**

The Contractor shall carry out the works in such a manner that soil erosion is fully controlled, and sedimentation and pollution of natural watercourses, ponds, tanks and reservoirs is avoided. The stipulations in Clause 308 of the Technical Specification of MoRTH (for Roads and Bridges) shall govern.

**H7. Substances Hazardous to Health**

The Contractor shall not use or generate any materials in the works, which are hazardous to the health of persons, animal or vegetation. Where it is necessary to use some substances, which can cause injury to the health of workers, the Contractor shall provide protective clothing or appliances to his workers.

All workers employed on mixing bituminous material, cement, lime mortars, concrete etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, would be provided with welder's protective eye-shields. Stone-breakers will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals.

**H8. Fuel and Chemical Storage**

All fuel and chemical storage shall be sited on an impervious base within an embanked area and secured by fencing. Location of fuel storage and refilling areas at least 500m from all cross drainage structures and important water bodies and storing of fuel and lubricants on a sand flooring of at least 6” thick, done on brick edge flooring and polyethylene sheet. The base and walls of the embankment shall be impermeable and of capacity to contain 125 % of the volume of tanks (i.e. 25 % of spare capacity).

Filling and refuelling shall be strictly controlled and subjected to formal procedures. All valves and trigger guns shall be resistant to unauthorised interference and vandalism and be turned off and securely locked when not in use. The contents of any tank or drum shall be clearly marked. Measures shall be taken to ensure that no contamination happens or discharges enter any drain or watercourse.

**H9. Water Quality**

Arrangement for construction water shall be the sole responsibility of the Contractor. Contractor can use pond, natural water source or identified to fill up for the project, but in that case, before using contractor shall obtain written consent from the owner / community and submit them to the Employer. To avoid disruption/disturbance to other water users, the contractor shall extract water from fixed locations and obtain approval from the Employer before finalizing the locations.
The Contractor shall prevent any interference to water supply or water abstraction sources (including underground percolating water) as a result of execution of the works. Areas where water is regularly or repetitively used for dust suppression purposes shall be laid to fall to specially constructed settlement tanks to permit sedimentation of particulate matter. After sedimentation, the water may be re-used for dust suppression.

All water and liquid waste products arising on the sites shall be collected and disposed of at location onsite or off site and in a manner that shall not cause nuisance or pollution. The Contractor shall not discharge or deposit any matter arising from the execution of the works into any place except with the permission of the Employer and the regulatory authorities concerned. The Contractor shall protect all water-courses, water ways, ditches, canals, drains, lakes and the like from pollution, silting, flooding or erosion as a result of the execution of the works. The Contractor shall submit the details of his temporary drainage work system (including all surface channels, sediment traps, washing basins and discharge-pits) to the Employer for approval prior to commencing works on its construction.

H10. Air Quality

The Contractor shall devise and arrange methods of working to minimize dust, gaseous or other air borne emissions and carry out the works in such a manner as to minimize adverse impacts on air quality.

Bituminous hot mix plants and concrete batching plants shall be located sufficiently away from habitation, agricultural operations or commercial establishments as stipulated in H3. The Contractor shall submit a detailed lay-out plan for all such sites and approval of the Employer shall be necessary prior to their establishment. Specifications of crushers, hot mix plants and batching plants shall comply with the requirements of the relevant current emission control legislations and Consent/NOC for all such plants shall be submitted to the Employer. The Contractor shall not initiate plant/s operation till the required regulatory clearances are obtained and submitted.

The Contractor shall utilize effective water sprays during the crushing, delivery, handling and mixing of materials when dust is generated and dampen stored material during dry weather. All crushers used in construction shall confirm to relevant dust emissions control as shall be stipulated as per BSPCB’s CFO.

Stockpiles of materials should be sited in sheltered areas or within hoarding, away from sensitive areas. Stockpiles of finer materials shall be covered with clean tarpaulins with application of sprayed water during dry and windy weather. Stockpiles of debris shall be dampened prior to their movement, except where this is contrary to the specifications.

Any vehicle with an open load carrying area used for transport of potentially dust producing materials shall have properly fitting side and tailboards. Materials having potential to produce dust shall not be loaded to a level higher than the side and tail boards and shall be covered with clean tarpaulin in good condition. The tarpaulin should be properly secured and extended to at least 300 mm over the edges of the sideboard and tailboard.
During high wind, no dust generating operations shall be permitted within 200m of residential areas having regard to the prevailing direction of the wind.

Construction vehicles and machinery shall be kept in good working order and engines turned off when not in use. Appropriate measures shall be taken to limit exhaust emissions from construction vehicles, machinery and plant and the Contractor shall include details of such proposed measures in the mitigation and monitoring plan to be submitted to the Employer.

The waste disposal and sewerage system for the camp shall be properly designed, built and operated so that no odour is generated. Compliance with the Factory Act, the Building and other construction workers (regulation of employment and conditions of service) Act, 1996 and all other relevant legislation shall be strictly adhered to.

In residential areas or other sensitive areas, such as nurseries, schools, hospitals, etc., advance warning shall be given to potentially affected persons before commencement of the works.

All the construction equipment vehicles shall have valid Pollution under Control (PUC) certificates and working reverse horn as per Motor Vehicles Rules.

H11. Noise

The Contractor shall consider noise as an environmental concern in his planning and during execution of the works.

The Contractor shall use plant and equipment conforming to international/ national standards and directives on noise, vibrations and emissions shall include the details of measures for abating noise at source in the mitigation and the monitoring plan to be submitted to the Employer.

The Contractor shall take all necessary measures to ensure that operation of all mechanical equipment and construction processes on and off the site shall not cause any unnecessary or excessive noise, taking into account all applicable environmental requirements. The Contractor shall use all necessary measures and shall maintain all plant and silencing equipment in good condition so as to minimize the noise emissions during construction works.

Workers in vicinity of strong noise, and workers working with or in crushing, compaction, batching or concrete mixing operations shall wear earplugs.

Construction activities generating noise level more than 75 dB (A) shall be avoided between 10PM and 6AM within 200m of residential areas. When operating within 200m of sensitive areas such as nursery, school or medical facilities, working hours shall be limited to 8 A.M. to 6 P.M. The noise level should not exceed 75 dB (A) at 1m from source while working near sensitive and residential areas.

H12. FLORA AND FAUNA
Loss or Damage of Vegetation

(a) All works shall be carried out in such a fashion that the damage or disruption to the flora is kept at a minimum. Trees or shrubs will only be felled or removed that impinge directly on the permanent works or necessary temporary works with prior approval from the Employer.

(b) The Employer shall approve such felling, only when the Employer secures receives a "clearance" for such felling from the Department of Forest, as applicable.

(c) Any maintenance works in national parks/sanctuaries shall be carried out only after the Employer secures prior permission from competent authorities.

Loss, Damage or Disruption to Fauna

(a) All works shall be carried out in such a fashion that the damage or disruption to the fauna is kept at a minimum.

(b) Construction workers shall be instructed to protect natural resources and fauna, including wild animals and aquatic life.

(c) Hunting and unauthorized fishing shall be strictly prohibited.

**H13. First Aid Facilities**

First Aid facilities shall be provided to the labour at each camp site. A separate room for first aid facilities should be built with one bed. Emergency Response System with Action Tree shall be displayed at the facilities. The site first aid room should display awareness posters on safety facilitation hygiene and HIV/AIDS awareness.

First Aid Box will be provided at every maintenance campsite and under the charge of a responsible person who shall always be readily available during working hours. He shall be adequately trained in administering first aid-treatment. The first aid box shall contain the following.

- 6 small sterilized dressings
- 3 medium size sterilized dressings
- 3 large size sterilized dressings
- 3 large sterilized burns dressings
- 1 (30 ml) bottle containing 2% alcoholic solution of iodine
- 1 (30 ml) bottle containing salvolatile
- 1 snakebite lancet
- 1 (30 gms) bottle of potassium permanganate crystals
- 1 pair scissors
- Ointment for burns
- A bottle of suitable surgical antiseptic solution

In case, the number of labour exceeds 50, the items in the first aid box shall be doubled.

Malarial Risk - The Contractor shall, at his own expense, conform to all anti-malarial instructions given to him by the Employer and District Health Director.
H14. Transmission of Diseases

The Contractor shall create awareness among his workforce to prevent transmission of diseases between the local inhabitants and the labourers engaged for the works, especially with regard to sexually transmitted diseases.

H15. Conservation of Religious Structures and Shrines

All necessary and adequate care shall be taken to minimize impact on cultural properties which includes cultural sites and remains, places of worship including temples, mosques, churches and shrines, etc., graveyards, monuments and any other important structures as identified during design and all properties / sites / remains notified under the Ancient Sites and Remains Act). No work shall spill over to these properties, premises and precincts. Access to such properties from the road shall be maintained clear and clean.

H16. Preservation of Archaeological Assets and Antiquities

The Contractor shall take all necessary measures to protect any archaeological finds or antiquities as required.

During earth excavation, if any property is unearthed and seems to be culturally significant or likely to have archaeological significance, the same shall be intimated to the Employer. Work shall be suspended until further orders from the Employer. The State Archaeological Department shall be intimated of the chance find and the Employershall carry out a joint inspection with the department. Actions as appropriate shall be intimated to the Contractor along with the probable date for resuming the work.

All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on the site shall be the property of the Government and shall be dealt with as per provisions of the relevant legislation.

The contractor shall take reasonable precautions to prevent his workmen or any other persons from removing and damaging any such article or thing. He shall, immediately upon discovery thereof and before removal acquaint the Employer of such discovery and carry out the instructions for dealing with the same by the Employer waiting while all work shall be stopped.

The Employer shall seek direction from the Archaeological Survey of India (ASI) before instructing the Contractor to recommence the work in the site.

H17. Environment Enhancement

All existing highways and roads used by vehicles of the Contractor or any of his sub-Contractors or suppliers of materials or plant, and similarly any new roads which are part of the works and which are being used by traffic, shall be kept clean and clear of all dust/mud or other extraneous materials dropped by the said vehicles or their tyres. Similarly, all dust/mud or other
extraneous materials from the works spreading on these highways shall be immediately cleared by the Contractor.

Clearance shall be effected immediately by manual sweeping and removal of debris, or, if so directed by the Employer, by mechanical sweeping and clearing equipment, and all dust, mud and other debris shall be removed entirely from the road surface. Additionally, if so directed by the Employer, the road surface shall be sprinkled or watered using suitable equipment.

Any structural damage caused to the existing roads by the Contractor’s construction equipment shall be made good without any extra cost. On completion of the works, the Contractor shall reinstate all areas with natural vegetation to the satisfaction of the Employer.

The Contractor shall remove all old tyres and internal tubes from within the limits of site and subject to the agreement of adjacent landowners, area of 20 m on either side of the road centre line. The Contractor shall dispose of all materials in a manner approved by the Employer.

Where directed by the Employer, the Contractor shall improve and reinstate the land on which informal roadside service area have been established by removing all debris and contaminated soils, re-grading to natural ground levels and re-establishing the natural vegetation where appropriate. All debris and contaminated materials shall be disposed off from site as approved by the Employer.

H18. Management of Waste Materials

Drainage spoil, unwanted shoulder material, dig out material and other non-recyclable road making material is not to be deposited on the roadside except where previously agreed with the Employer. The Contractor shall dispose of any unauthorised construction debris and/or Municipal solid waste deposited by either the Contractor or Public within the Road Reserve Corridor (particularly just on the outskirts of the urban areas).

Disposal Areas

The Contractor shall explore the opportunity of disposing construction debris at nearby municipal disposal sites for construction debris with prior permission of the local authorities. The new disposal areas shall be identified based on following criteria:

- No residential areas are located downwind side of these locations;
- Dumping sites are located at least 1000 m away from sensitive locations such as all notified forest lands, all water bodies, and productive lands
- Available waste lands are given preference.
- In case of bituminous wastes, dumping shall be carried out over a 30 cm thick layer of rammed clay so as to eliminate any chances of leaching. Care should be taken not to dispose these wastes near farmland.
- In case of filling of low-lying areas with wastes, it needs to be ensured that the level matches with the surrounding areas. In this case care should be taken that these low lying areas are not used for rainwater storage.
- In case oil and grease are trapped for reuse in a lined pit, care shall be taken to ensure that the pit should be located at the lowest end of the site and away from the residential areas.
• All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, where necessary will be planned and implemented as approved and directed by the Employer.

All material removed away from the maintenance corridor shall be disposed of in a manner and location as approved by the Employer. No-objection Certificate (NOC) from land owner / Revenue authorities, as may be applicable, shall be obtained and submitted to Employer.

H19. Road Encroachments

Where the Contractor observes that any new illegal structure has been built or placed on the road reserve, or any other unauthorised damage to the road surface i.e. vehicle repair damage, he is to immediately report the infringement to the Employer. If any existing encroachment prevents the Contractor completing work at a particular location, the Contractor shall notify the Employer and await further instruction to proceed.

H20. Labour

• The contractor shall, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.
• The contractor shall, if required by the Employer, deliver a written in detail, such form and at such intervals as maybe prescribed, showing the staff and the numbers of the several classes of labour from time to time employed by the contractor on the site.
• During continuance of the Contract, the Contractor and his Sub-contractors shall abide at all times by all existing labour enactments and rules made there under, 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 Central Government or the local authority.
• The payment of wages should be as per the Minimum Wages Act, Department of Labour, Government of India for both male and female workers.
• Display of the minimum wages board at camps and major construction sites should be done in local languages at the construction and labour camp sites.

• Contractor is required to maintain register for payment of labour wages with entry of every labour working for him. Also, he has to produce it for verification if and when asked by Employer
• In case there are sub-contractors, the main contractor shall be responsible for ensuring that the payment of wages to labourers is as per the Minimum Wages Act. Sub-contractor has to follow the same procedure as the main contractor.

H21. Workers’ Accident Risks

Risk from Operations
The Contractor is required to comply with all the precautions as required for the safety of the workmen as per the International Labour Organization (ILO) convention No. 62 as far as those are applicable to this contract. The contractor shall supply all necessary safety appliances such as safety goggles, helmets, masks, books, etc., to the workers and staff. The contractor has to comply with all regulation regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.

**Risk from Electrical Equipment**

Adequate precautions will be taken to prevent danger from electrical equipment. No materials on any of the sites will be so stacked or placed as to cause danger or inconvenience to any person or the public. All necessary fencing and lights will be provided to protect the public. All machines to be used in the construction will conform to the relevant Indian Standards (IS) codes, will be free from patent defect, will be kept in good working order, will be regularly inspected and properly maintained as per IS provisions and to the satisfaction of the Employer.

**H22. Reinstall the land**

The Contractor shall improve and reinstall the land on which informal roadside service area have been established by removing all debris and contaminated soils, re-grading to natural ground levels and re-establishing the natural vegetation as per relevant Specification and as directed by the Employer. All debris and contaminated materials shall be disposed off from site as approved by the Employer.

**H23. Contractor’s Checklist**

A Contractor Checklist is provided in Appendix F.1. The Contractor is required to fill up this checklist giving the specific details of environmental safeguard measures proposed by him, in accordance with EMF requirement. This checklist shall serve as the basis for implementing safeguard measures by the Contractor and monitoring the same by the Employer.

**H24. Legislative Permits/Approvals**

Compliance to environmental approvals as detailed below is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labor Camp, exploring new borrow pit areas quarry sites, bore wells and other water sources. Failure to meet the relevant requirement will be reported to the relevant Government Department.

**Table H.1 Environmental and Social Legislative Approvals/Authorities**

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Note: For new sources, the Contractor shall provide a copy of evidence of compliance of this requirement to the Employer. For existing sources, the Contractor shall procure material from approved sources which are authorised by the concerned department as per the legislative requirements.
PART 3
CONDITIONS OF CONTRACT AND CONTRACT FORMS
SECTION VI

GENERAL CONDITIONS (GC)
# Section VI
## General Conditions (GC)

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A. CONTRACT AND INTERPRETATION

1. Definitions  1.1  Boldface type is used to identify defined terms.

Schedule of Prices means the priced and completed Schedule of Prices forming part of the Contractor’s Bid.

The Certificate of Completion is a document issued by the Employer upon completion of Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works and Emergency Works, or parts thereof, as applicable, in accordance with GC 54.1

The Completion Date is the date of completion of the Services and Works as certified by the Employer, in accordance with Sub-Clause 10.2.

The Contract is the Contract between the Employer and the Contractor to perform the services to be provided by the Contractor, and to execute, complete, and maintain the Works. It consists of the documents listed in Clause 3 below.

The Contractor is a person or corporate body who’s Bid to carry out the Works and Services has been accepted by the Employer.

The Contractor’s Bid is the completed bidding document submitted by the Contractor to the Employer.

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

Days are calendar days; months are calendar months.

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

The Defects Liability Certificate is the certificate issued by Employer upon correction of defects by the Contractor.

The Defects Liability Period is the period specified in the Contract and is applicable for Periodic Maintenance and Minor Improvement Works, with exclusions identified in the PC, if any.

Dispute Review Expert (DRE) is one expert selected and acting in accordance with rules and procedures defined in the Contract to seek to resolve any dispute of any kind that may arise between the Employer and the Contractor in connection with or arising out of the contract, as provided for in Clause 6 hereunder.

Drawings include calculations and other information provided by the Contractor for the execution of the Contract.

Emergency Works is a set of necessary and sufficient activities to reinstate the Road and reconstruct its structure or right of way strip
damaged as a result of natural phenomena with imponderable consequences, such as strong storms, flooding and earthquakes. The need for execution of Emergency Works is jointly identified by the Employer and the Contractor and for starting of execution of Emergency Works the Employer shall issue a Work Order.

The **Employer** is the party who employs the Contractor to carry out the Works and Services. Executive Engineer of the concerned Road Division is the Employer.

**Equipment** is the Contractor’s machinery and vehicles brought temporarily to the Site to construct the Works and to carry out the Services.

**Minor Improvement Works** consists of a set of interventions that add new characteristics to the Road in response to existing or new traffic, safety or other conditions, as defined in the Specifications.

**Periodic Maintenance Works** are specific and clearly defined civil works the Contractor is required to carry out under the conditions of the Contract, as defined in the Specifications. Periodic Maintenance Works quantities were estimated by the Contractor to achieve the performance standards defined by the Service Levels and offered at a Lump-Sum price.

**Initial Rectification Works** consist of additional rectification works required in the initial stage of the Contract to allow the Contractor to bring the road up to the required Service Level Criteria.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works and Services. The Intended Completion Date is specified in the Particular Conditions (PC). The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

**Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works and for provision of Services.

**Engineer –in- charge** is the Executive Engineer of the concerned Road Division.

**Road** means the road or network of roads for which the Works and Services are contracted under the Contract.

The **Road Management Office** is the location indicated by the Contractor from which the Road Manager operates, and where the Contractor shall receive notifications.

The **Road 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 purposes of this contract.

**Services** means all interventions on the Road under the Contract and all activities related to the management and evaluation of the Road which shall be carried out by the Contractor in order to achieve and keep the Road Performance Standards as defined by the Service Levels, and to receive full payment of the monthly fee under the contract.

**Service Levels** are the minimum performance standards for the level of quality of conditions of the Road defined in the Specifications which the Contractor shall comply with.

The **Site** is the area defined as such in the PC.

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

The **Start Date** is the date when the Contractor has started the physical execution of the Works and Services on the site. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a contractual agreement with the Contractor to carry out certain activities related to the services to be provided under the contract, which may include work on the Site.

**Specifications** means the Specifications of the Works and Services included in the Contract and any modification or addition made or approved by the Employer.

A **Variation** is an instruction given by the Employer which varies the Works or Services.

The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as covered under Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works and Emergency Works.

**Work Order** is an order issued by the Employer to the Contractor authorizing the execution of Improvement Works and Emergency Works, as provided for in Clause 27 hereunder.

2. **Interpretation**  

2.1 In interpreting these General Conditions (GC), singular also means plural, male also means female or neuter, and vice versa. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Employer will provide instructions clarifying queries about these General
3. Documents Forming the Contract

3.1 The documents forming the Contract shall be interpreted in the following order of priority:

(1) Agreement,
(2) Letter of Acceptance,
(3) Contractor’s Bid,
(4) Particular Conditions (PC),
(5) General Conditions (GC),
(6) Specifications,
(7) Drawings,
(8) Schedule of Prices, and
(9) any other document listed in the PC as forming part of the Contract.

4. Language and Law

4.1 The language of the Contract and the law governing the Contract are stated in the PC.

5. Notices

5.1 Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, airmail post, special courier, fax or E-mail to the address of the relevant party set out in the PC, with the following provisions:

5.1.1 Any notice sent by fax or E-mail shall be confirmed within two (2) days after dispatch by notice sent by airmail post or special courier, except as otherwise specified in the Contract.

5.1.2 Any notice sent by airmail post or special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after dispatch. In proving the fact of dispatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by airmail or special courier.

5.1.3 Any notice delivered personally or sent by fax or E-mail shall be deemed to have been delivered on date of its dispatch.

5.1.4 Either party may change its postal, fax or E-mail address or addressee for receipt of such notices by ten (10) days’ notice to the other party in writing.

5.2 Notices shall be deemed to include any approvals, consents, instructions, orders and certificates to be given under the Contract.

5.3 The Contractor shall provide at its own cost, and maintain in operation permanently during the duration of the Contract, such
communications equipment which ensures that both written (fax or E-mail) and oral (voice) communications can be established at all times

(a) between the Road Manager and his senior field staff;
(b) between the Employer and the Road Manager;
(c) between the public telephone system and the Road Manager;
(d) The equipment to be provided and maintained includes the equipment located at the Employer’s office.

5.4 At the Start Date of the Contract, the Contractor must communicate to the Employer the address of his office, including the postal, fax and E-mail address, which for the purposes of this contact is called the Road Management Office, where Notices will be addressed to. The Employer may require that the physical location of the Road Management Office is within the close geographical area of the Road. If the Contractor fails to communicate the address of his Road Management Office, and the Employer is otherwise unable to locate the Road Manager, all notifications to the Contractor shall be valid if a copy is sent to the Contractor’s legal address.

(b) 6. Settlement of Disputes

6.1 Dispute Review Expert

6.1.1 If any dispute of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Works and Services—whether during the progress of the execution or after completion and whether before or after the termination, abandonment or breach of the Contract—the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference by mutual consultation, then the matter in dispute shall, in the first place, be referred in writing by either party to the Disputes Review Expert (‘DRE’), with a copy to the other party.

6.1.2 The DRE shall take up his functions after having signed a DRE’s Declaration of Acceptance as required by the DRE’s Rules and Procedures (which, along with the Declaration of Acceptance form, are attached to the Contract). The DRE shall be a person experienced with the type of construction and services involved in the Contract and with the interpretation of contractual documents and shall be selected by agreement between the Employer and the Contractor. If the DRE is not
selected within 28 days of the date of the Letter of Acceptance, then upon the request of either or both parties the DRE shall be selected as soon as practicable by the Appointing Authority specified in the PC.

6.1.3 In the event of death, disability, or resignation of the DRE, the latter shall be replaced by agreement between the Employer and the Contractor. Any replacement made by the parties shall be completed within 28 days after the event giving rise to the need for a replacement, failing which the replacement shall be made by the same appointing authority as above.

6.1.4 Either the Employer or the Contractor may refer a dispute to the DRE in accordance with the provisions of the DRE’s Rules and Procedures, attached to the Contract. The Recommendation of the DRE shall be binding on both parties, who shall promptly give effect to it unless and until the same shall be revised, as hereinafter provided, in an arbitral award. Unless the Contract has already been repudiated or terminated, the Contractor shall continue to proceed with the Works and Services in accordance with the Contract.

6.1.5 If either the Employer or the Contractor is dissatisfied with any Recommendation of the DRE, or if the DRE fails to issue his Recommendation within 56 days after he has received the written Request for Recommendation, then either the Employer or the Contractor may, within 14 days after his receipt of the Recommendation, or within 14 days after the expiry of the said 56-day period, as the case may be, give notice to the other party of his intention to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 6.3, no arbitration in respect thereof may be commenced unless such notice is given.

6.1.6 If the DRE has issued a Recommendation to the Employer and the Contractor within the said 56 days and no notice of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor within 14 days after the parties received such Recommendation from the DRE, the Recommendation shall become final and binding upon the Employer and the Contractor.

6.1.7 Whether or not it has become final and binding upon the Employer and the Contractor, a Recommendation shall be admissible as evidence in any subsequent dispute resolution procedure, including any arbitration or litigation having any
relation to the dispute to which the Recommendation relates.

6.1.8 All Recommendations that have become final and binding shall be implemented by the parties forthwith.

6.2 Arbitration

6.2.1 If either the Employer or the Contractor is dissatisfied with the DRE’s decision, then either the Employer or the Contractor may, in accordance with Sub-Clause 6.1.5, give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. The arbitral tribunal shall have full power to open up, review, and revise any decision, opinion, instruction, determination, certificate, and any Recommendation(s) of the DRE.

6.2.2 Any dispute in respect of which a notice of intention to commence arbitration has been given, in accordance with GC Sub-Clause 6.2.1, shall be finally settled by arbitration. Neither party shall be limited in the proceedings before such arbitration tribunal to the evidence or arguments put before the DRE for the purpose of obtaining his Recommendation(s) pursuant to Sub-Clause 6.2.1. No Recommendation shall disqualify the DRE from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute Arbitration may be commenced prior to or after completion of the Works and Services.

6.2.3 Arbitration proceedings shall be conducted in accordance with the rules of procedure designated in the PC.

6.3 Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 6.1.5 and the related Recommendation has become final and binding, either party may, if the other party fails to comply with such Recommendation and without prejudice to any other right it may have, refer the failure to arbitration in accordance with Sub-Clause 6.2. The provisions of Sub-Clause 6.1 shall not apply to any such reference.

6.4 Notwithstanding any reference to the DRE or Arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree

(b) the Employer shall pay the Contractor any monies due the Contractor.
B. ASSIGNMENT OF RESPONSIBILITIES

7. Scope of Works and Services

7.1 Unless otherwise expressly limited in the Specifications, the Contractor’s obligations cover the Design, the carrying out of all Works and the performance of all Services required for keeping the Road in accordance with the Service Levels defined in the Specifications, while at the same time respecting the plans, procedures, specifications, drawings, codes and any other documents as identified in the Specifications. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment; Contractor’s Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, if any, as set forth in the corresponding Specifications.

7.2 The Contractor shall, unless specifically excluded in the Contract, perform all such work, services and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining the Performance Standards (as specified in Clause 24 of GC) as if such work, services and/or items and materials were expressly mentioned in the Contract.

8. Design Responsibility

8.1 The Contractor shall be responsible for the design and programming of the Works and Services, and for the accuracy and completeness of the information used for that design and programming in accordance with the requirements established in the Specifications.

8.2 Specifications and Drawings

8.2.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract and the Specifications, or where not so specified in accordance with good engineering practice.

The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Employer or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.

8.2.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other
document, or any modification thereof, provided or designated by, or on behalf of, the Employer, by giving a notice of such disclaimer to the Employer.

8.3 Codes and Standards

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of bid submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GC Clause 63.

8.4 Approval/Review of Technical Documents by Employer

8.4.1 For those Works specified in the PC, the Contractor shall prepare (or cause its Subcontractors to prepare) and furnish to the Employer the documents listed in the Specifications (List of Documents for Approval or Review) for its approval or review.

Unless otherwise specified in the PC, the Contractor shall not be required to submit for the Employer’s approval the Design or other technical documents concerning the Ordinary Maintenance Services remunerated through monthly lump-sum payments.

Any part of the Works covered by or related to the documents to be approved by the Employer shall be executed only after the Employer’s approval thereof.

GC Sub-Clauses 8.4.2 through 8.4.7 shall apply only to those documents requiring the Employer’s approval, but not to those furnished to the Employer for his information or review only.

8.4.2 Within fourteen (14) days after receipt by the Employer of any document requiring the Employer’s approval in accordance with GC Sub-Clause 8.4.1, the Employer shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefore and the modifications that the Employer proposes.

If the Employer fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Employer.

8.4.3 The Engineer shall not disapprove any document, except on the grounds that the document does not comply with some
specified provision of the Contract or that it is contrary to good engineering practice.

8.4.4 If the Employer disapproves the document, the Contractor shall modify the document and resubmit it for the Employer’s approval in accordance with GC Sub-Clause 8.4.2. If the Employer approves the document subject to modification(s), the Contractor shall make the required modification(s), whereupon the document shall be deemed to have been approved.

8.4.5 If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Employer of any document and/or any modification(s) thereto that cannot be settled between the parties within a reasonable period, then such dispute or difference may be referred to the DRE for determination in accordance with GC Sub-Clause 6.1 hereof. If such dispute or difference is referred to the DRE, the Employer shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Employer’s instructions, provided that if the DRE upholds the Contractor’s view on the dispute and if the Employer has not given notice under GC Sub-Clause 6.1.5 hereof, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the DRE shall decide, and the Time for Completion shall be extended accordingly.

8.4.6 The Employer’s approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Employer.

8.4.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Employer an amended document and obtained the Employer’s approval thereof, pursuant to the provisions of this GC Sub-Clause 8.4.

If the Employer requests any change in any already approved document and/or in any document based thereon, the provisions of GC Clause 63.2 shall apply to such
9. Copyright

9.1 The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

10. Start Date and Completion

10.1 The Contractor shall start the Works and Services within the period specified in the PC. Upon request from the Contractor, the Employer shall confirm in writing the Start Date, after verifying that works and services have started on the Site.

10.2 The Contractor shall attain the required Service Levels and the Completion of the Initial Rectification, Periodic Maintenance and Minor Improvement Works (or of a part where a separate time for Completion of such part is specified in the Contract) within the time schedules included in the PC and the Specifications, or within such extended time to which the Contractor shall be entitled under GC Clause 64 hereof.

11. Contractor’s Responsibilities

11.1 The Contractor shall design and carry out the Works and Services (including associated purchases and/or subcontracting) necessary to comply with the requirements established in the Specifications with due care and diligence in accordance with the Contract.

11.2 The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Works and Services required, including any data and tests provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site and of other data readily available to it relating to the Road as of the date twenty-eight (28) days prior to bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Works and Services.

11.3 The Contractor shall acquire in its name all permits, approvals and/or licenses from all local, state or central government authorities or public service undertakings in the country of the Employer that are necessary for the performance of the Contract, including, without limitation, visas for the Contractor’s and Subcontractor’s personnel and entry permits for all imported Contractor’s Equipment (if any). The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GC Sub-Clause 14.3 hereof and that are necessary for the performance of the Contract.

11.4 The Contractor shall comply with all laws in force in the country.
of the Employer and where the Works and Services are carried out. The laws will include all local, state, central or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GC Sub-Clause 14.1 hereof.

12. Subcontracting  
12.1 The Contractor may subcontract activities listed in the PC. Any other activity under the Contract may be subcontracted only when approved by the Employer. The Contractor may not assign the entire Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor’s obligations nor relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen.

12.2 Notwithstanding GC Sub-Clause 12.1, the Contractor may subcontract under his own responsibility and without prior approval of the Employer the small Works and Services also listed in the PC.

13. Assignment of Contract  
13.1 Neither the Employer nor the Contractor shall, without the express prior written consent of the other party (which consent shall not be unreasonably withheld), assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

14. Employer’s Responsibilities  
14.1 The Employer shall apply due diligence to ensure the accuracy of all information and/or data to be supplied to the Contractor as described in the Specifications, except when otherwise expressly stated in the Contract.

14.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the corresponding Specifications. The Employer shall give full possession of and accord all rights of access thereto on or before
the date(s) specified in the PC.

14.3 The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located, when such authorities or undertakings require the Employer to obtain them in the Employer’s name, are necessary for the execution of the Contract, and are specified in the corresponding Specifications.

14.4 If requested by the Contractor, the Employer shall use its endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or central government authorities or public service undertakings that such authorities or undertakings require the Contractor or Subcontractors or personnel of the Contractor or Subcontractors, as the case may be, to obtain.

14.5 The Employer shall be responsible for the continued operation of the Road after Completion, in accordance with GC Sub-Clause 28, and shall be responsible for facilitating the Guarantee Test(s) for the Road, in accordance with GC Sub-Clause 20.

14.6 All costs and expenses involved in the performance of the obligations under this GC Clause 14 shall be the responsibility of the Employer, save those to be incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with GC Sub-Clause 20.

15. Confidential Information

15.1 The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GC Clause 15.

15.2 The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Road. Similarly, the Contractor shall not use such documents, data and other
information received from the Employer for any purpose other than the design, procurement of Plant and Equipment, construction or such Works and Services as are required for the performance of the Contract.

15.3 The obligation of a party under GC Sub-Clauses 15.1 and 15.2 above, however, shall not apply to that information which
(a) now or hereafter enters the public domain through no fault of that party;
(b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto;
(c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

15.4 The above provisions of this GC Clause 15 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Works and Services or any part thereof.

15.5 The provisions of this GC Clause 15 shall survive termination, for whatever reason, of the Contract.

C. Execution of Works and Services

16. Representatives

16.1 Engineer-in-charge

The Engineer-in-charge shall represent and act as the Employer at all times during the period of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Engineer in charge, except as herein otherwise provided.

16.2 Road Manager

16.2.1 If the Road Manager is not named in the Contract, then the Contractor shall appoint the Road Manager before the Start Date and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Road Manager shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefore, then the Contractor
shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GC Sub-Clause 16.2.1 shall apply thereto.

16.2.2 The Road Manager shall represent and act for the Contractor at all times during the period of the Contract and shall give to the Employer all the Contractor’s notices, instructions, information and all other communications under the Contract. The Road Manager shall be in charge of the day-to-day management of the works and services to be provided under the contract on behalf of the Contractor, and shall have legal and all other faculties to take all necessary decisions related to the execution of the contract.

All notices, instructions, information and all other communications given by the Employer to the Contractor under the Contract shall be given to the Road Manager or, in its absence, its deputy, except as herein otherwise provided.

The Contractor shall not revoke the appointment of the Road Manager without the Employer’s prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Road Manager, pursuant to the procedure set out in GC Sub-Clause 16.2.1.

16.2.3 The Road Manager may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice to the Employer signed by the Road Manager, and shall specify the powers, functions and authorities thereby delegated or revoked.

Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GC Sub-Clause 16.2.3 shall be deemed to be an act or exercise by the Road Manager.

16.2.4 From the Start Date until Completion, the Road Manager shall supervise all work and services done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Road Manager is absent from the Site, a suitable person shall be appointed to act as his or her deputy.
16.2.5 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under the Specifications. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Site.

16.2.6 If any representative or person employed by the Contractor is removed in accordance with GC Sub-Clause 16.2.5, the Contractor shall, where required, promptly appoint a replacement.

17. Work Program

17.1 Contractor’s Organization

The Contractor shall supply to the Employer a chart showing the proposed organization to be established by the Contractor for carrying out the Works and Services. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be employed as included in the Contractor’s Bid. The Contractor shall promptly inform the Employer in writing of any revision or alteration of such an organization chart.

17.2 Program of Performance

Not later than the Start Date, the Contractor shall prepare and supply to the Employer a program of performance of the Contract, made in the form specified in the Specifications and showing the sequence in which it proposes to design and carry out the Works and Services, as well as the date by which the Contractor reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the Contract in accordance with the program and to achieve Completion in accordance with the Contract. The Contractor shall update and revise the program as and when appropriate, but without modification in the Time of Completion given in the PC and any extension granted in accordance with GC Clause 64, and shall supply all such revisions to the Employer.

17.3 Progress Report

The Contractor shall monitor progress of all the activities specified in the program referred to in GC Sub-Clause 17.2 above, and supply a progress report to the Employer every month together with his Monthly Statement. The progress report shall be in a form acceptable to the Employer in accordance with the Specifications.

17.4 Progress of Execution
If at any time the Contractor’s actual progress falls behind the program referred to in GC Sub-Clause 17.2, or it becomes apparent that it will so fall behind, the Contractor shall prepare and supply to the Employer a revised program, taking into account the prevailing circumstances, and shall notify the Employer of the steps being taken to expedite progress so as to attain Completion of the Works and Execution of Services activities within the Time for Completion under GC Sub-Clause 10.2, any extension thereof entitled under GC Sub-Clause 64, or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

17.5 Work Procedures

The Contract shall be executed in accordance with the Contract Documents and the procedures given in the Specifications.

18. Execution of Works

18.1 Setting Out/Supervision/Labor

18.1.1 Bench Mark. The Contractor shall be responsible for the true and proper setting-out of the Works in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Employer.

If, at any time during the progress of execution of the Works, any error shall appear in the position, level or alignment of the Works, the Contractor shall forthwith notify the Employer of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Employer. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer.

18.1.2 Contractor’s Supervision. The Contractor shall give or provide all necessary supervision during the execution of the Works, and the Road Manager or its deputy shall be on the Site to provide full-time supervision of the execution. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.

18.2 Contractor’s Equipment

18.2.1 All Contractor’s Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without
informing the Employer.

18.2.2 Unless otherwise specified in the Contract, upon completion of the Works and Services, the Contractor shall remove from the Site all Equipment brought by the Contractor onto the Site and any surplus materials remaining thereon.

18.2.3 The Employer will, if requested, use its best endeavors to assist the Contractor in obtaining any local, state or central government permission required by the Contractor for the export of the Contractor’s Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

18.3 Site Regulations and Safety

The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, proposed Site regulations for the Employer’s approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety, traffic control, accident response, gate control, sanitation, medical care, and fire prevention.

18.4 Access to site for Other Contractors

18.4.1 The Contractor shall, upon written request from the Employer, give site access to other contractors employed by the Employer on or near the site.

18.5 Site Clearance

18.5.1 Site Clearance in Course of Execution: In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor’s Equipment no longer required for execution of the Contract.

18.5.2 Clearance of Site after Completion: After Completion of all parts of the Works and Services, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and the Road clean and safe.

18.6 Watching and Lighting
The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Works and Services, for the protection of his own installations and his equipment, for the safety of the owners and occupiers of adjacent property and for the safety of the public.

18.7 Access to the Site

The Contractor shall allow the Employer and any person authorized by the Employer 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.

18.8 Management Meetings

18.8.1 Either the Employer/ Engineer-in-charge or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised by either the Contractor or the Employer.

18.8.2 The Employer 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 Employer either during or after the management meeting and stated in writing to all who attended the meeting.

19. Staff and Labor

19.1 The Contractor shall employ the key personnel named in the Contractor’s Bid, to carry out the functions stated in the Specifications or other personnel approved by the Employer. The Employer will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel listed in the Contractor’s Bid.

19.2 Labor

(a) The Contractor shall provide and employ on the Site for the execution of the Works and Services such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.

(b) Unless otherwise provided in the Contract, the Contractor shall be responsible for the recruitment, transportation, accommodation and catering of all labor, local or expatriate, required for the execution of the Contract and for all payments in connection therewith.
(c) The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into the country where the Site is located.

(d) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor’s personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor.

(e) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.

(f) The Contractor shall provide lodging, medical assistance, alimentation and sanitary installations for the employees living in the contractor’s base camps to comply with the Social, Sanitary and Health Conditions of Labor requirements established in the Specifications.

(g) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.

(h) HIV-AIDS Prevention. If so indicated in the PC, the Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider or specialized NGO, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor’s Personnel and the local community, to promote early diagnosis and to assist affected individuals. The Contractor shall throughout the contract: (i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Sub-Contractors and Consultants' employees working on the Site, and truck drivers and crew making deliveries to the Site for Works and Services executed under the contract, and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in
particular; (ii) provide male or female condoms for all Site staff and labor as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.

(i) If so indicated in the PC, the Contractor shall include in the program to be submitted for the execution of the Works and Services under Sub-Clause 17 a program for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

19.3 Removal of staff

If the Employer 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 work in the Contract.

19.4 Work at Night and on Holidays

19.4.1 Unless otherwise provided in the Contract, if and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Service Levels and the Time for Completion, and requests the Employer’s consent thereto (if such consent is needed), the Employer shall not unreasonably withhold such consent.

20. Test and Inspection

20.1 The Contractor shall at its own expense carry out on the Site all such tests and/or inspections as are specified in the Specifications, and in accordance with the procedures described in the Specifications.

20.2 The Employer their designated representatives shall be entitled to attend the aforesaid test and/or inspection.

20.3 For tests to be carried out on the initiative of the Contractor, whenever the Contractor is ready to carry out any such test and/or inspection, he shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the
Employer. The Contractor shall provide the Employer with a signed report of the results of any such test and/or inspection.

20.4 If the Employer fails to attend a scheduled test and/or inspection, or if it is agreed between the parties that such persons shall not attend, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Employer with a signed report of the results thereof.

20.5 The Employer may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor’s reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of the works and/or the Contractor’s performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

20.6 If Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works or Emergency Works fail to pass any test and/or inspection, the Contractor shall either rectify or replace such works and shall repeat the test and/or inspection upon giving a notice under GC Sub-Clause 20.3.

20.7 If any dispute or difference of opinion shall arise between the parties in connection with or arising out of the test and/or inspection of the Works and Services, or part of them, that cannot be settled between the parties within a reasonable period of time, it may be referred to the DRE for determination in accordance with GC Sub-Clause 6.1.

20.8 The Contractor agrees that neither the execution of a test and/or inspection of the Works and Services or any part of them, nor the attendance by the Employer, nor the issue of any test certificate pursuant to GC Sub-Clause 20.4, shall release the Contractor from any other responsibilities under the Contract.

20.9 No part or foundations shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Employer whenever any such part or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.

20.10 The Contractor shall uncover any part of the Works or foundations, or shall make openings in or through the same as the Employer may from time to time require at the Site, and shall reinstate and make good such part or parts.
If any parts of the Works or foundations have been covered up at the Site after compliance with the requirement of GC Sub-Clause 20.9 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.


21.1 If so indicated in the PC, specific Initial Rectification and Periodic Maintenance Works shall be carried out explicitly in accordance with the Specifications and as specified in the bidding documents and in the Contractor’s Bid. Input quantities for Initial rectification and Periodic Maintenance Works are estimated by the Contractor to achieve the performance criteria for Initial Rectification and Periodic Maintenance Works given in the Specifications. The specific Initial Rectification and Periodic Maintenance Works are offered by the Contractor at a Lump-Sum price.

22. Minor Improvement Works

22.1 If so indicated in the PC, Minor Improvement Works are required and will consist of a set of interventions that add new characteristics to the roads in response to new traffic and safety or other conditions. Minor Improvement Works quantities are offered at unit prices included in the Schedule of Prices.

22.2 The execution of Minor Improvement Works shall be requested by the Engineer-in-charge, who will issue a Work Order defining the requested works to be carried out by the Contractor, based on the activities priced in the Schedule of Prices. The Work order shall specify the activities to be carried out and the corresponding price. The Employer shall confirm his acceptance by signing the Work Order.

23. Ordinary Maintenance Services

23.1 Ordinary Maintenance Services are those activities necessary for keeping the Road in compliance with the Performance Standards pursuant to GC Clause 24. Ordinary Maintenance Services shall include all activities required to achieve and keep the Road Performance Standards and Service Levels. These Services will be remunerated by Lump-Sum amount for the period of the contract paid in fixed monthly payments during the entire Contract period.

24. Performance Standards

24.1 The Contractor shall carry out the Ordinary Maintenance Services to achieve and keep the Road complying with the Service Levels defined in the Specifications. He will carry out all Works in accordance with the performance standards indicated in the Specifications.

25. Contractor’s

25.1 The Contractor shall, throughout the execution and completion of
Self-Control of Quality and Safety

the Works and Services, maintain a System which shall ensure that the work methods and procedures are adequate and safe at all times and do not pose any avoidable risks and dangers to the health, safety and property of the workers and agents employed by him or any of his subcontractors, of road users, of persons living in the vicinity of the roads under contract, and any other person who happens to be on or along the roads under contract.

25.2 Unless specified otherwise in the PC, the Contractor shall establish, within his own organizational structure, a specific Unit staffed with qualified personnel, whose task is to verify continuously the degree of compliance by the Contractor with the required Service Levels. That Unit will also be responsible for the generation and presentation of the information needed by the contractor for the documentation required as defined in the Specifications. The Unit will be responsible for maintaining a detailed and complete knowledge of the condition of the Road and to provide to the Road Manager all the information needed in order to efficiently manage and maintain the Road. The Unit shall also carry out, in close collaboration with the Employer, the verifications on the Service Levels.

25.3 The Contractor’s Self-Control Unit mentioned in GC Sub-Clause 25.2 shall report the level of compliance with the required Service Levels in the standard format presented in the Specifications.

26. Environmental and Safety Requirements

26.1 The Contractor shall, throughout the design, execution and completion of the Works and Services, and the remedying of any defects therein:

(a) have full regard for the safety of all persons employed by him and his subcontractors and keep the Site (so far as the same is under his control) in an orderly state appropriate to the avoidance of danger to such persons;

(b) provide and maintain at his own cost all guardrails, fencing, warning signs and watching, when and where necessary or required by Sub-Clause 18.3 of the Contract or by any duly constituted authority, for the protection of the Works and Services or for the safety and convenience of his workers and road users, the public or others; and

(c) take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.

27. Work Orders for Minor Improvement

27.1 Minor Improvement Works and Emergency Works shall be executed by the Contractor on the basis of Work Orders issued by the Employer.
27.2 Work Orders shall be issued in writing and shall include the date on which the Work Order was issued and the signature of the Employer. Two copies of the Work Order shall be transmitted by the Employer to the Contractor, who shall immediately countersign one copy, including the date of acceptance, and return it to the Employer.

27.3 If the Contractor has any objection to a Work Order, the Road Manager shall notify the Employer of his reasons for such objection within ten (10) days of the date of issuing the Work Order. Within five (5) days of the Road Manager's objection, the Employer shall cancel, modify or confirm the Work Order in writing.

28. Taking Over Procedures

28.1 When the whole of the Works and Services have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Employer to issue a Taking-Over Certificate in respect of the Works and Services. The Employer shall, within twenty-one (21) days of the date of delivery of such notice, either issue to the Contractor a Taking-Over Certificate, stating the date on which the Works and Services were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the conditions to be complied with and all the work which is required to be done by the Contractor before the issue of such Certificate. The Employer shall also notify the Contractor of any defects in the Works and Services affecting substantial completion that may appear after such instructions and before completion of Taking-Over Certificate within twenty-one (21) days of completion, to the satisfaction of the Employer, of the Works and Services so specified and remedying any defects so notified.

28.2 Similarly, in accordance with the procedure set out in Sub-Clause 28.1, the Contractor may request and the Employer shall issue a Taking-Over Certificate in respect of:

(a) any Section in respect of which a separate Time for Completion is provided in the contract,

(b) any substantial part of the Works and Services which has been both completed to the satisfaction of the Employer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or

(c) any part of the Works and Services which the Employer has elected to occupy or use prior to completion (where such
29. Emergency Works

29.1 The need for execution of Emergency Works is jointly identified by the Employer and the Contractor and the starting of the execution of Emergency Works shall always require a Work Order issued by the Employer.

29.2 The execution of Emergency Works shall be requested by the Contractor based on losses or damages occurred as a result of natural phenomena (such as strong storms, flooding or earthquakes) with imponderable consequences, or on the possibility of damages or losses occurring, or the safety of individuals, works, services or equipment being at risk as result of the natural phenomena. In order to characterize the Emergency Works, the Contractor shall forward a Technical Report to the Employer requesting the execution of Emergency Works and characterizing the situation. On the basis of the said report, and of his own judgment of the situation, the Employer may issue a Work Order to the Contractor.

29.3 The Employer or even Government authorities may declare an Emergency Situation on the basis of local legislation. In those cases, the Employer may issue a Work Order for Emergency Works to the Contractor even without a request by the Contractor.

29.4 If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine necessary in order to prevent damage to the Road. 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 therefore. If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense 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.

30. Quality of materials used by Contractor

30.1 The quality of materials used by the Contractor for the execution of the Contract shall be in compliance with the requirements of the Specifications. If the Contractor is of the opinion that materials of higher quality than those stated in the Specifications need to be used in order to ensure compliance with the Contract, he shall use such better materials, without being entitled to higher prices or remunerations.

30.2 Under no circumstances may the Contractor make any claim based on the insufficient quality of materials used by him, even if the material used was authorized by the Employer.
30.3 The Contractor shall carry out at his own cost the laboratory and other tests that he needs to verify if materials to be used comply with the Specifications, and shall keep records of such tests. If requested by the Employer, the Contractor shall hand over the results of the tests.

31. Signalling and demarcation of work zones and bypasses

31.1 To ensure the safety of road users, including non-motorized road users and pedestrians, the Contractor is responsible to install and maintain at his cost the adequate signalling and demarcation of work sites, which in addition must comply with the applicable legislation.

31.2 If the execution of services and works under the contract is likely to interfere with traffic, the Contractor shall take at his cost the measures necessary to limit such interference to the strict minimum, or any danger to the workers or others. For that purpose, he is entitled to install, within the right-of-way of the road, temporary bypasses, structures or other modifications to be used by traffic during the execution of works and services. The Contractor shall notify the Employer of any such temporary installations.

31.3 If the execution of Works and Services by the Contractor makes it necessary to temporarily close a road section, and a traffic detour has to be implemented over other public roads or streets, the Contractor shall be responsible for the adequate signalling of the detour, under the same conditions as stated in GC Sub-Clause 31.1.

31.4 The Contractor shall inform the local authorities and the local police about such activities to be carried out by him which may cause any significant interruptions or changes to the normal traffic patterns. Such information shall be made in writing and at least seven (7) days before the beginning of such activities. Upon request from the Contractor, the Employer shall assist the Contractor in the coordination with the local authorities and the local police.

D. ALLOCATION OF RISKS

32. Employer’s Risks

32.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Employer’s risks insofar as they directly affect the execution of the Works and Services included in this Contract:

(a) war, hostilities (whether war be declared or not), invasion,
act of foreign enemies;

(b) rebellion, revolution, insurrection, military or usurped power, or civil war;

(c) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors and arising from the conduct of the Works and Services;

(d) loss or damage due to the use or occupation by the Employer of any unfinished Section or part of the Works, except as may be provided for in the Contract;

(e) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.

33. Contractor’s Risks

33.1 The Employer carries the risks which this Contract states are Employer’s risks, and the remaining risks are the Contractor’s risks.

34. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification

34.1 Subject to GC Sub-Clause 34.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney’s fees and expenses, in respect of the death or injury of any person or loss of or damage to any property arising in connection with the execution and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.

34.2 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GC Sub-Clause 34.1, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer’s name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

The Employer shall, at the Contractor’s request, afford all available
assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

34.3 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Employer, other than the Works not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GC Clause 35, provided that such fire, explosion or other perils were not caused by any act or failure of the Contractor.

34.4 The party entitled to the benefit of an indemnity under this GC Clause 34 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the party fails to take such measures, the other party’s liabilities shall be correspondingly reduced.

35. Insurance

35.1 To the extent specified in the PC, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said PC. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.

(a) 

**Loss of or damage to the Plant and Materials**

Covering loss or damage occurring prior to Completion.

(b) 

**Third Party Liability Insurance**

Covering bodily injury or death suffered by third parties (including the Employer’s personnel) and loss of or damage to property occurring in connection with Works and Services.

(c) 

**Automobile Liability Insurance**

Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the execution of the Contract.

(d) 

**Workers’ Compensation**

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(e) 

**Employer’s Liability**

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(f) 

**Other Insurances**

Such other insurances as may be specifically agreed upon by
Section VI: Technical Specifications

35.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 35.1, except for the Third Party Liability, Workers’ Compensation and Employer’s Liability Insurances, and the Contractor’s Subcontractors shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GC Sub-Clause 35.1 except for the Cargo Insurance During Transport, Workers’ Compensation and Employer’s Liability Insurances. All insurer’s rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies.

35.3 The Contractor shall deliver to the Employer certificates of insurance (or copies of the insurance policies) as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days’ notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.

35.4 The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.

35.5 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GC Sub-Clause 35.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor.

35.6 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GC Clause 35, and all monies payable by any insurers shall be paid to the Contractor. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer’s interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor’s interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

36. Unforeseen Conditions

36.1 If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions (other than climatic conditions) or artificial obstructions that could not have been
reasonably foreseen prior to the date of the Contract Agreement by an experienced contractor on the basis of reasonable examination of the data relating to the Road (including any data and tests provided by the Employer), and on the basis of information that it could have obtained from a visual inspection of the Site or other data readily available to it relating to the Road, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Plant and Equipment or Contractor’s Equipment, notify the Employer in writing of

(a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;

(b) the additional work and/or Plant and Equipment and/or Contractor’s Equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions;

(c) the extent of the anticipated delay;

(d) the additional cost and expense that the Contractor is likely to incur.

On receiving any notice from the Contractor under this GC Sub-Clause 36.1, the Employer decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Employer shall instruct the Contractor of the actions to be taken.

36.2 Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Employer to overcome such physical conditions or artificial obstructions referred to in GC Sub-Clause 36.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

36.3 If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GC Sub-Clause 36.1, the Time for Completion shall be extended in accordance with GC Clause 64.

37. Change in Laws and Regulations

37.1 If, after the date twenty-eight (28) days prior to the date of Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the
Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the PC.

38. Force Majeure

38.1 “Force Majeure” shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, insofar as they directly affect the execution of the Services and Works included in this Contract and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:

(a) war, hostilities or warlike operations (whether a state of war be declared or not), invasion, act of foreign enemy and civil war;

(b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts;

(c) confiscation, nationalization, mobilization, commandeering, requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority;

(d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague;

(e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster;

(f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.

38.2 If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

38.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party’s performance is prevented, hindered or delayed. The Time for Completion shall be
extended in accordance with GC Clause 64.

38.4 The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either party’s right to terminate the Contract under GC Sub-Clause 38.6.

38.5 No delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall
(a) constitute a default or breach of the Contract;
(b) give rise to any claim for damages or additional cost or expense occasioned thereby;

if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.

38.6 If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party’s right to terminate the Contract under GC Clause 59.

38.7 In the event of termination pursuant to GC Sub-Clause 38.6, the rights and obligations of the Employer and the Contractor shall be as specified in GC Sub-Clauses 59.1.2 and 59.1.3.

38.8 Notwithstanding GC Sub-Clause 38.5, Force Majeure shall not apply to any obligation of the Employer to make payments to the Contractor herein.

E. GUARANTEES AND LIABILITIES

39. Completion Time Guarantee and Liability

39.1 The Contractor guarantees that it shall attain specified Service Levels and the Completion of Initial Rectification, Periodic Maintenance and Minor Improvement Works (or a part for which a separate time for completion is specified in the PC) within the time schedules specified in the PC and the Specifications, pursuant to GC Sub-Clause 10.2, or within such extended time to which the Contractor shall be entitled under GC Clause 64 hereof.

39.2 If the Contractor fails to attain specified Service Levels within the contractually agreed time schedules as given in the Specifications, the contractor shall receive reduced payments for Ordinary Maintenance Services, for such default and not as a penalty, in
accordance with the Specifications.

39.3 If the Contractor fails to attain the Completion of Initial Rectification, Periodic Maintenance and Minor Improvement Works (or a part for which a separate time for completion is specified in the PC clause 39.1) within the contractually required time schedules, the contractor shall pay to the Employer liquidated damages for such default and not as a penalty, in accordance with the PC and the Specifications.

39.4 The payment reductions and liquidated damages indicated in GC 39.2 and 39.3 shall be the only monies due from the Contractor for such defaults, and they will be applied for every day of delay, in accordance with the PC and the Specifications. The aggregate amount of such liquidated damages and payment reductions shall in no event exceed the “aggregate liability” in accordance with GC Clause 42. The payment or deduction of such sums 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.

40. Performance Guarantee and Liability

40.1 The Contractor guarantees that during the Performance Tests or Inspections for Initial Rectification, Periodic Maintenance and Minor Improvement Works, and for Emergency Works, the Road and all parts thereof shall attain the Performance Standards specified in the corresponding Specifications.

40.2 If, for reasons attributable to the Contractor, the minimum level of the Performance Standards specified in the corresponding Specifications 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 Road or any part thereof as may be necessary to meet at least the minimum level of such Standards. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Test or Inspection until the minimum level of the Standards has been met. If the Contractor eventually fails to meet the minimum level of Performance Standard, the Employer may consider termination of the Contract, pursuant to GC Sub-Clause 59.2.2.

40.3 If, for reasons attributable to the Contractor, the Performance Standards relating to Initial Rectification, Periodic Maintenance and Minor Improvement Works specified in the corresponding Specifications 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 Performance Standards at its cost and expense, and shall request
the Employer to repeat the Test, or

(b) pay liquidated damages to the Employer in respect of the Works and Services which fail to meet the Performance Standards in accordance with the provisions in the corresponding Specifications.

40.4 The payment of liquidated damages under GC Sub-Clause 40.3, up to the limitation of liability specified in the PC, shall completely satisfy the Contractor’s guarantees under GC Sub-Clause 40.1, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Employer shall issue the Certificate of Completion for the Works or any part thereof in respect of which the liquidated damages have been so paid.

41. Defect Liability

41.1 The Contractor warrants that the Works and Services or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Works and Services executed.

41.2 The Defect Liability Period shall be twelve (12) months from the date of Completion of the Contract, or eighteen (18) months from the date of Certificate of Completion of the Works (or any part thereof), whichever occurs first, unless specified otherwise in the PC.

If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Works and Services executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Road caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect of any damage to the Road arising out of or resulting from improper operation or maintenance of the Road by the Employer after taking over.

41.3 The Contractor’s obligations under this GC Clause 41 shall not apply to

(a) any works or materials that have a normal life shorter than the Defect Liability Period stated herein;

(b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein;

(c) any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the
Employer under GC Sub-Clause 41.6.

41.4 The Employer 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 shall afford all reasonable opportunity for the Contractor to inspect any such defect.

41.5 The Employer shall afford the Contractor all necessary access to the Site to enable the Contractor to perform its obligations under this GC Clause 41. The Contractor may remove from the Site any Plant and Equipment that are defective if the nature of the defect is such that repairs cannot be expeditiously carried out at the Site.

41.6 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Road caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable 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 Performance Security.

41.7 If the Road or any part thereof cannot be used by reason of such defect and/or making good of such defect, 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 cannot be used because of any of the aforesaid reasons.

41.8 Except as provided in GC Clauses 40 and 41, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Road or any part thereof, the Plant and Equipment, design or engineering or work executed that appear after Completion of the Works and Services, except where such defects are the result of the gross negligence, fraud, criminal or wilful action of the Contractor.

42. Limitation of Liability

42.1 Except in cases of criminal negligence or wilful misconduct,

(a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer and

(b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the limit specified in the PC.
43. Liability for Damages through Traffic Accidents and Traffic Interruptions

43.1 The Contractor cannot be held liable for losses or damages of any kind arising out of traffic accidents on the roads included in the Contract, unless those traffic accidents have been caused directly by potholes or other major defects of the Road covered by the Contract he failed to repair in a timely manner, criminal acts, wilful misconduct or gross negligence of the Contractor.

43.2 Under no circumstances can the Contractor be held liable for losses or damages of any kind and to anyone arising out of interruptions of traffic or traffic delays on the road included in the Contract, including any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs.

F. PAYMENT

44. Contract Price

44.1 The Contract Price shall be as specified in the Form of Contract Agreement to be paid in the currencies indicated in the PC.

44.2 Unless indicated otherwise in the PC, and except in the event of a Change as provided for in the Contract, the Contract Price shall be:

(a) For Ordinary Maintenance Services, a firm lump sum to be paid in monthly instalments;

(b) For Initial Rectification Works, a firm lump sum, to be paid according to work progress;

(c) For Periodic Maintenance Works, a firm lump sum, to be paid according to work progress;

(d) For Minor Improvement Works, the total price stated in the Schedule of Prices for this item;

(e) For Emergency Works, the Provisional Sum reserved for this purpose.

44.3 The Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

45. Advance Payment

45.1 The Employer shall make advance payment to the Contractor of the amounts and by the date stated in the PC, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the
Contractor. Interest will not be charged on the advance payment.

45.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for the execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Employer.

45.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works and Services on a payment basis as indicated in the PC.

46. **Schedule of Prices**

46.1 The Schedule of Prices shall contain items for Groups of Activities which include the provision of Services (measured by performance standards) and Works (measured by unit of outputs or of products). The Schedule of Prices for Works shall include, where applicable, the lump-sum and unit price for Initial Rectification and Periodic Maintenance Works, and unit rates for Minor Improvement Works and for provisional sum for Emergency/Day work.

46.2 Ordinary Maintenance Services shall be measured and billed separately and will be remunerated by lump-sum amount for the period of the contract, and paid in fixed monthly payments during the entire Contract period. The values for remuneration of the Ordinary Maintenance Services are those stated in the Schedule of Prices.

46.3 Initial Rectification and Periodic Maintenance Works will be remunerated by Lump-Sum amount for the period of the contract, however, indicating the quantities of measurable outputs to be executed in order that the Road achieves the performance standards specified in the bidding documents. Payments will be made in accordance with the execution of those measured outputs paid by executed works output. The prices shall be those stated in the Schedule of Prices.

46.4 Minor Improvement Works will be remunerated after acceptance by the Employer and shall be paid according to the product unit price using the prices included in the Schedule of Prices.

46.5 Each Emergency Work Order issued by the Employer will be pursuant to GC Clauses 29 and 61 and will be prepared based on the Specifications and on the unit prices included in the Schedule of Prices or on the basis of input based method and on the Current SOR rate just before the execution of work.

46.6 The Schedule of Prices is used to calculate the Contract Price. The amounts for Ordinary Maintenance Services, Initial Rectification and Periodic Maintenance Works are the Lump-Sum prices offered...
in the Contractor’s Bid. The Minor Improvement Works amount included in the Contract is an estimate on the basis of the unit prices included in the Contractor’s Bid. The Provisional Sum included in the Contract Price is an estimate for use when authorized by the Employer for Emergency Works and contingencies.

47. Measurement

47.1 Ordinary Maintenance Services will not be measured in volume; however its payment will be affected by compliance with the Performance Standards pursuant to GC Clause 24. Ordinary Maintenance Services shall be billed in fixed monthly amounts as per the Schedule of Prices Lump-Sum amount for Ordinary Maintenance Services, beginning from the Start Date. Payments will be made with Reductions if the Performance Standards are not achieved, as defined in the Specifications. The Reductions for non-compliance with the Performance Standards will be applied on a daily basis for the period under which the Road does not achieve the Performance Standards, in accordance with the methodology specified in the Specifications.

47.2 Initial Rectification and Periodic Maintenance Works will be measured on the basis indicated in the PC, based on the quantity of actual work outputs as defined in the Specifications, concluded by the Contractor and approved by the Employer. The prices shall be those stated in the Schedule of Prices.

47.3 Minor Improvement Works will be measured on the basis indicated in the PC and in accordance with the unit of measurement used for product unit price included in the Schedule of Prices. The prices shall be those stated in the Schedule of Prices.

47.4 Emergency Works will not be measured and shall be billed in accordance with the Schedule of Payments agreed for each specific Emergency Work as approved by the Employer.

48. Price Adjustments

48.1 Contract payments shall be adjusted for increase or decrease in rates and prices in accordance with the principles and procedures and as per formula given in the Particular Conditions.

48.2 To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other clauses in the Contract, the rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise and fall in costs.

49. Monthly Statements and Payments

49.1 The Contractor shall submit to the Employer monthly statements in the format indicated in the Specifications, of the estimated value of Ordinary Maintenance Services, Initial Rectification Works, Periodic Maintenance Works, Minor Improvement Works, and Emergency Works in separated items covering the Works and Services for the corresponding month.

49.2 The Employer shall check the Contractor’s monthly statement and
certify within fourteen (14) days the amount to be paid to the Contractor.

49.3 The value of Services executed shall be certified by the Employer taking into account the monthly amount included in the Schedule of Prices for Ordinary Maintenance Services and the achievement of the Performance Standards for the Ordinary Maintenance Services adjusted for any payment reductions in accordance with GC Sub-Clause 47.1.

49.4 The value of Works executed shall be certified by the Employer taking into account the value of the quantities of products executed and the prices in the Schedule of Prices.

49.5 The 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.

50. Payments

50.1 Payments shall be adjusted for deductions for advance payments, retention, and reductions for not achieving Performance Standards for Ordinary Maintenance Services. The Employer shall pay the Contractor the amounts certified in accordance with GC Clause 49, within twenty-eight (28) days of the date of each certificate positively.

50.2 Unless otherwise stated, all payments and deductions will be paid or charged in the proportions of currencies comprising the Contract Price.

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

51. Retention and Reductions

51.1 The Employer shall retain the percentage indicated in the PC from each payment due to the Contractor for Initial Rectification, Periodic Maintenance Works and Minor Improvement Works, except for the types of works specified in the PC. The regular monthly lump-sum payments for performance-based Ordinary Maintenance Services will not be subject to retentions, unless indicated in the PC.

51.2 On completion of the Initial Rectification, Periodic Maintenance and Minor Improvement Works, half the total amount retained shall be repaid to the Contractor and the other half after twelve (12) months have passed and the Employer has certified that all Defects notified to the Contractor have been corrected before the end of this period.

51.3 On completion of the whole Works and Services, the Contractor may substitute retention money with an “on demand” Bank guarantee.

51.4 Reduction of monthly payments for Ordinary Maintenance Services due to non compliance with the Service Levels will be made as
indicated in GC Sub-Clause 47.1. The amount of Reduction for the days in which the Road was not complying with the Performance Standards will not be paid or repaid, even after the Contractor re-establishes the quality levels to the standards required by the contract.

52. Taxes and Duties

52.1 Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Works and Services in and outside of the country where the Site is located.

52.2 If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the country where the Site is located, the Employer shall use its best endeavours to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.

52.3 For the purpose of the Contract, it is agreed that the Contract Price specified in the Form of Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of bid submission in the country where the Site is located (hereinafter called “Tax”). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of the Contract, which was or will be assessed on the Contractor, Subcontractors or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GC Clause 37 hereof.

53. Securities

53.1 Issuance of Securities

The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner and form specified below.

53.2 Advance Payment Security

53.2.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the corresponding PC to the Contract Agreement.

53.2.2 The security shall be in the form provided in the bidding documents or in another form acceptable to the Employer. The amount of the security shall be reduced in proportion to the value of the Works and Services executed by and paid to
the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Employer. The security shall be returned to the Contractor immediately after its expiration.

53.3 Performance Security

53.3.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security for the due performance of the Contract in the amount specified in the PC.

53.3.2 The security shall be in one of the forms of guarantees provided in the bidding documents, as stipulated by the Employer in the PC, or in another form acceptable to the Employer.

53.3.3 The security shall automatically become null and void, twelve (12) months after Completion of all Works and Services under the Contract, provided however, that if the Defects Liability Period has been extended on any part of the Works pursuant to GC Sub-Clause 41.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor immediately after its expiration.

54. Certificate of Completion

54.1 The Contractor shall request the Employer to issue a Certificate of Completion of the Initial Rectification, Periodic Maintenance Works, Minor Improvement Works and Emergency Works, or parts thereof, as applicable, and the Employer will do so upon deciding that the work is completed.

55. Final Statement

55.1 The Contractor shall supply the Employer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Employer shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within fifty-six (56) days of receiving the Contractor’s account if it is correct and complete. If it is not, the Employer shall issue within fifty-six (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 Employer shall decide on the amount payable to the Contractor and issue a payment certificate.

56. Discharge

56.1 Upon submission of the Final Statement, the Contractor shall give to the Employer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 55 has been made and the performance security referred
to in Sub-Clause 53.3, if any, has been returned to the Contractor.

57. As Built Drawings and Manuals

57.1 If “as built” Drawings and/or manuals are required, the Contractor shall supply them by the dates stated in the PC.

57.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the PC, or they do not receive the Employer’s approval, the Employer shall withhold the amount stated in the PC from payments due to the Contractor.

G. REMEDIES

58. Suspension

58.1 The Employer may request by notice to the Contractor, to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefore. The Contractor shall thereupon suspend performance of such obligation (except those obligations necessary for the care or preservation of the Site and Works) until ordered in writing to resume such performance by the Employer.

If, by virtue of a suspension order given by the Employer, other than by reason of the Contractor’s default or breach of the Contract, the Contractor’s performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Employer that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GC Sub-Clause 63.1, excluding the performance of the suspended obligations from the Contract.

If the Employer fails to do so within such period, the Contractor may, by a further notice to the Employer, elect to treat the suspension as termination of the Contract under GC Sub-Clause 59.1.

58.2 If

(a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Contract, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GC Sub-Clause 50.1, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, if fails to approve such invoice or supporting documents or give its reasons for withholding such
approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor’s notice; or

(b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer’s failure to provide possession of or access to the Site, or failure to obtain any governmental permit under the Employer’s responsibility and necessary for the execution and/or completion of the Works and Services,

then the Contractor may by fourteen (14) days’ notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.

58.3 If the Contractor’s performance of its obligations is suspended or the rate of progress is reduced pursuant to this GC Clause 58, then the Time for Completion shall be extended in accordance with GC Sub-Clause 64, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor’s default or breach of the Contract.

58.4 During the period of suspension, the Contractor shall not remove from the Site any Plant and Equipment or any Contractor’s Equipment, without the prior written consent of the Employer.
59. Termination 59.1 Termination for Employer’s Convenience

59.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GC Sub-Clause 59.1.

59.1.2 Upon receipt of the notice of termination under GC Sub-Clause 59.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination

(a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works and Services already executed, or any work required to leave the Site in a clean and safe condition,

(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below,

(c) remove all Contractor’s Equipment from the Site, repatriate the Contractor’s and its Subcontractors’ personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition.

(d) In addition, the Contractor, subject to the payment specified in GC Sub-Clause 59.1.3, shall

(i) deliver to the Employer the parts of the Works executed by the Contractor up to the date of termination,

(ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works and Services and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors

(iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Works.

59.1.3 In the event of termination of the Contract under GC Sub-Clause 59.1.1, the Employer shall pay to the Contractor the following amounts:

(a) the Contract Price, properly attributable to the parts of the works and services executed by the Contractor as of
the date of termination,

(b) the costs reasonably incurred by the Contractor in the removal of the Contractor’s Equipment from the Site and in the repatriation of the Contractor’s and its Subcontractors’ personnel,

(c) any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any subcontracts, including any cancellation charges,

(d) the costs incurred by the Contractor in protecting and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GC Sub-Clause 59.1.2,

(e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.

59.2 Termination for Contractor’s Default

59.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefore to the Contractor, referring to this GC Sub-Clause 59.2:

(a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt;

(b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GC Clause 13;

(c) if the Contractor, in the judgment of the Employer has engaged in corrupt, fraudulent, collusive or coercive practices in competing for or in executing the Contract.

For the purpose of this Sub-Clause:

“corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

“fraudulent practice” means a misrepresentation of facts
in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

“collusive practice” means a scheme or arrangement between two or more bidders, with or without the knowledge of the Borrower, designed to establish bid prices at artificial, noncompetitive levels.

“coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the procurement process or affect the execution of a contract.

59.2.2 If the Contractor

(a) has abandoned or repudiated the Contract

(b) has without valid reason failed to commence work on the Road promptly or has suspended (other than pursuant to GC Sub-Clause 58.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed,

(e) persistently fails to execute the Contract in accordance with the Contract, such failure being defined in the PC, or persistently neglects otherwise to carry out its obligations under the Contract without just cause,

(d) refuses or is unable to provide sufficient materials, services or labour to execute and complete the Works and Services in the manner specified in the program furnished under GC Clause 17 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain completion of the works and services by the Time for Completion as extended,

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GC Sub-
Clause 59.2.

59.2.3 Upon receipt of the notice of termination under GC Sub-Clauses 59.2.1 or 59.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

(a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Works and Services already executed, or any work required to leave the Site in a clean and safe condition

(b) terminate all subcontracts, except those to be assigned to the Employer based on the Employer’s written request,

(c) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Works and Services.

59.2.4 The Contractor shall be entitled to be paid the Contract Price attributable to the Works and Services executed as of the date of termination, and the costs, if any, incurred in protecting and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GC Sub-Clause 59.2.3. Any sums due the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

59.3 Termination by Contractor

59.3.1 If

(a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to GC Clause 50, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GC Sub-Clause 50.2, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor’s notice, or
(b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer’s failure to provide possession of or access to the Site or other areas or failure to obtain any governmental permit under the Employer’s responsibility and necessary for the execution and/or completion of the Works and Services,

then the Contractor may give a notice to the Employer thereof, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within twenty-eight (28) days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within twenty-eight (28) days of the said notice, the Contractor may by a further notice to the Employer referring to this GC Sub-Clause 59.3.1, forthwith terminate the Contract.

59.3.2 The Contractor may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GC Sub-Clause 59.3.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt.

59.3.3 If the Contract is terminated under GC Sub-Clauses 59.3.1 or 59.3.2, then the Contractor shall immediately

(a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Road already executed, or any work required to leave the Site in a clean and safe condition,

(b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii),

(c) remove all Contractor’s Equipment from the Site and repatriate the Contractor’s and its Subcontractors’ personnel from the Site.

(d) In addition, the Contractor, subject to the payment specified in GC Sub-Clause 59.3.4, shall

(i) deliver to the Employer the parts of the Road executed by the Contractor up to the date of
termination,

(ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Road and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors,

(iii) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Works and Services.

59.3.4 If the Contract is terminated under GC Sub-Clauses 59.3.1 or 59.3.2, the Employer shall pay to the Contractor all payments specified in GC Sub-Clause 59.1.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Contractor arising out of, in connection with or in consequence of such termination.

59.3.5 Termination by the Contractor pursuant to this GC Sub-Clause 59.3 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GC Sub-Clause 59.3.

59.4 In this GC Clause 59, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by the Employer to the Contractor under the Contract, including any advance payment paid pursuant to the Contract.

H. PROVISIONAL SUM

60. Provisional Sum

60.1 “Provisional Sum” means a sum included in the Contract for use when authorized by the Employer for Emergency Works and for contingencies, which sum may be used, in whole or in part, or not at all, on the instructions of the Employer. The Contractor shall be entitled to only such amounts in respect of the work, supply or
contingencies to which such Provisional Sums relate as the Employer shall determine in accordance with this Clause.

61. Use of Provisional Sum for Emergency Works

61.1 After detecting a situation which in the opinion of the Contractor justifies the execution of Emergency Works or otherwise as defined in GC Clause 29, the Contractor shall submit a Technical Report to the Employer characterizing the situation. The emergency work shall be executed as per specification on the basis of Current SOR just before execution of the work if the rates of any item are not included in the contract.

61.2 If the execution of the Emergency Works require any activity not priced in the Schedule of Prices, the Contractor will use the price breakdowns included in the Contractor’s Bid in order to form the unit prices of the unpriced items to be included in the Price Quotation of the Emergency Works, all in accordance with agreed methodology for approving new prices.

61.3 Upon receiving the request for Emergency Works including a Price estimate based on clause 61.1 & 61.2 the Employer may issue a Work Order in accordance with GC Sub-Clause 29.2 for execution of the Emergency Works with a payment Schedule agreed with the Contractor. The cost of these Works will be covered by the amounts included in the Provisional Sum.

62. Use of Provisional Sum for Contingencies

62.1 The use of the Provisional Sum to cover for Contingencies will be done under the control and initiative of the Employer in accordance with the conditions of the Contract.

I. CHANGE IN CONTRACT ELEMENTS

63. Change in Assignments to Contractor

63.1 Introducing a Change

63.1.1 If so indicated in the PC, the Employer shall have the right to propose, and subsequently require, that he order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Assignments to the Contractor (hereinafter called “Change”), provided that such Change falls within the general scope of the Assignment and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Works and Services and the technical compatibility of the Change envisaged with the nature of the Works and Services as specified in the Contract.

63.1.2 If so indicated in the PC, the Contractor may from time to time during its performance of the Contract propose to the Employer any Change that the Contractor considers necessary
or desirable to improve the quality, efficiency or safety of the Works and Services. The Employer may at its discretion approve or reject any Change proposed by the Contractor.

63.1.3 Notwithstanding GC Sub-Clauses 63.1.1 and 63.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.

63.1.4 The procedure on how to proceed with and execute Changes is specified in GC Sub-Clauses 63.2 and 63.3, further details and sample forms are provided in the Sample Forms and Procedures section in the bidding documents.

63.2 Changes Originating from Employer

63.2.1 If the Employer proposes a Change pursuant to GC Sub-Clause 63.1.1, it shall send to the Contractor a “Request for Change Proposal,” requiring the Contractor to prepare and furnish to the Employer, as soon as reasonably practicable, a “Change Proposal,” which shall include the following:

(a) brief description of the Change
(b) effect on the Time for Completion
(c) estimated cost of the Change
(d) effect on Functional Guarantees (if any)
(e) effect on any other provisions of the Contract

63.2.2 Prior to preparing and submitting the “Change Proposal,” the Contractor shall submit to the Employer an “Estimate for Change Proposal,” which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Contractor’s Estimate for Change Proposal, the Employer shall do one of the following:

(a) accept the Contractor’s estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal,
(b) advise the Contractor of any part of its Estimate for Change Proposal that is unacceptable and request the Contractor to review its estimate,
(c) advise the Contractor that the Employer does not intend to proceed with the Change.

63.2.3 Upon receipt of the Employer’s instruction to proceed under GC Sub-Clause 63.2.2 (a), the Contractor shall, with proper
expedition, proceed with the preparation of the Change Proposal, in accordance with GC Sub-Clause 63.2.1.

63.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the parties thereto shall agree on specific rates for the valuation of the Change.

63.2.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith, and with all other Change Orders that have already become binding upon the Contractor under this GC Clause 63, would be to increase or decrease the Contract Price as originally set forth in the Contract Agreement by more than fifteen percent (15%), the Contractor may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Contractor’s objection, the Employer shall withdraw the proposed Change and shall notify the Contractor in writing thereof.

The Contractor’s failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

63.2.6 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GC Sub-Clause 63.2.2.

63.2.7 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the
Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a “Pending Agreement Change Order.”

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.

If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the DRE in accordance with the provisions of GC Sub-Clause 6.1.

63.3 Changes Originating from Contractor

63.3.1 If the Contractor proposes a Change pursuant to GC Sub-Clause 63.1.2, the Contractor shall submit to the Employer a written “Application for Change Proposal,” giving reasons for the proposed Change and including the information specified in GC Sub-Clause 63.2.1.

Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GC Sub-Clauses 63.2.6 and 63.2.7. However, should the Employer choose not to proceed, the Contractor shall not be entitled to recover the costs of preparing the Application for Change Proposal.

64. Extension Time for Completion

64.1 The Time(s) for Completion specified in the PC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:

(a) any Change in the Works and Services as provided in GC Clause 63,
(b) any occurrence of Force Majeure as provided in GC Clause 38 and unforeseen conditions as provided in GC Clause 36,
(c) any suspension order given by the Employer under GC Clause 58,
(d) any changes in laws and regulations as provided in GC Clause 37, or
(e) any default or breach of the Contract by the Employer, or any activity, act or omission of any other contractors employed by the Employer, or
(f) any other matter specifically mentioned in the Contract by such period as shall be fair and reasonable in all the
circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

64.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer’s estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a DRE, pursuant to GC Sub-Clause 6.1.

64.3 The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

65. Release from Performance

65.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor, the Employer 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.

66. Inspections and Audits

66.1 The Contractor shall permit the Employer and/or persons appointed by the Employer to inspect the Site and/or the accounts and records of the Contractor and its sub-contractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed by the Employer if required by the Employer. The Contractor’s attention is drawn to Sub-Clause 67.1 [Corrupt or Fraudulent Practices] which provides, inter alia, that acts intended to materially impede the exercise of the Employer’s inspection and audit rights provided for under Clause 66 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility under the Procurement Guidelines).

67. Corrupt or Fraudulent Practices

67.1 If the Employer determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contractor’s employment under the Contract and expel him from the Site, and the provisions of Clause 59 shall apply.

67.2 Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall
be removed in accordance with Clause 19.3.

67.3 For the purposes of this Sub-Clause:

(i) “corrupt practice” is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party

(ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) “obstructive practice” is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Employer investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under Clause 66 [Inspections and Audits].
SECTION VII

PARTICULAR CONDITIONS (PC)
Section VII. Particular Conditions (PC)

The following Particular Conditions shall supplement the GC. They are to be completed by the Employer and presented as part of the Bidding Documents. Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

Reference to GC clauses

1. The site is the area: encompasses ROW of the Road and Road Assets of Packages.

   The intended Completion Date is: 5 years from the start date.

   DRE – Replace the word ‘selected’ by ‘appointed’.

   In Periodic Maintenance work replace word ‘were’ by ‘are’.

   In Intended Completion Date replace the word ‘Engineer’ by ‘Engineer – in Charge’.

   In Road Management Office replace the word ‘notifications’ by ‘notices/communications/correspondences’.

   The name of the Employer Executive Engineer, Road Division........................................

3. 1. The following documents are also part of the Contract: Appendices

   2. Addendum issued (if any) during bidding process shall be between contractor’s letter of bid and Particular Condition. Schedule of prices include BOQ in case of Minor Improvement.

   3. Any other document forming part of the agreement will be placed below serial number 9.

   4. Contractor’s bid is to be replaced by Letter of bid. Letter of bid means the document entitled Letter of Bid which was completed by the Contractor and includes the signed offer to the Employer for the works.

4. The language of the Contract is English/Hindi and the law governing the Contract is the law of the Union of India

5. The address of the Employer is:

   The address of the Contractor is:

   Address:.................................
**Telephone and fax numbers:**

**Mobile No:**

**E-Mail address:**

**6.1.2 & 6.1.6**

The Appointing Authority is: The Chairman, Institution of Engineers/IRC/Indian Institute of Arbitration.

In case of dispute or difference arising between Employer and Contactor relating to any matter setting out of or connected with this agreement such dispute or difference shall be settled in accordance with the Dispute Review Expert (DRE) Rules and procedures.

DRE shall be selected by Employer and Contactor by mutual consent within 90 days of date of letter of Acceptance.

Dispute proceedings shall be held at Patna, Bihar, India, and the language of the proceedings and that of all documents and communications between the parties shall be English/Hindi.

The decision of the DRE shall be final and binding upon both parties. The cost and expenses of dispute proceedings (including remuneration of DRE, hotel expenses TA/DA etc.) shall be equally shared by each party itself.

Replace the word DRE recommendation by DRE Decision.

**6.1.6**

Replace 14 days by 28 days.

**6.2.2**

Replace Sub-Clause 6.2.1 by 6.1.

**6.2.3**

Arbitration proceeding shall be in accordance with BIHAR PUBLIC WORKS CONTRACTS DISPUTES ARBITRATION TRIBUNAL ACT 2008 (Bihar Act 21, 2008)

**8.2.1**

Replace the word ‘with good engineering practice’ by ‘of direction of Engineer – in Charge’.

In last line after the word Employer or not is deleted.

**8.4.1**

The Contractor is obliged to prepare and to furnish to the Employer for Approval the following documents: **as detailed in Clause A14 of the Technical Specifications.**

The technical specifications of Ordinary Maintenance works shall be as per the guidelines of MORTH.
<table>
<thead>
<tr>
<th>8.4.5</th>
<th>Replace word ‘determination’ by ‘decision’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>The Start Date shall be 30 days from the date of agreement.</td>
</tr>
<tr>
<td>10.2</td>
<td>The Time Schedule for the achievement of specific Service Levels is: Section V Parts C &amp; D of the Technical Specifications</td>
</tr>
<tr>
<td>11.3</td>
<td>The phrase ‘The contractor shall acquire all other permits ...’ will be read as ‘The contractor shall also acquire all other permits ...’.</td>
</tr>
<tr>
<td>11.4</td>
<td>“The Contractor shall comply with all laws in force in the country of the Employer and where the Works and Services are carried out” will be read as “The Contractor shall comply with all laws in force in”.</td>
</tr>
</tbody>
</table>
| 12.1  | The line “The Contractor may not assign the entire Contract without the approval of the Employer in writing” is deleted. The Contractor is allowed to subcontract (only to those contractors who are domicile of Bihar) the following activities: 

50% of whole work except Patrol maintenance Unit and OM works. |
| 12.2  | The Contractor may subcontract under his own responsibility and without prior approval of the Employer the following Works and Services provided they do not represent more than twenty five (25) percentage of the contract value: 

Vegetation and scrub control
Drain cleaning and construction
Grading of unpaved surfaces

Under no circumstances is the Contractor allowed to subcontract the PMU activities and OM activities |
| 14.2  | The Employer shall give full possession of and access to the Site within 15 days from date of agreement. |
| 14.6  | The word ‘All costs and expenses’ will be read as ‘All cost’. |
| 16.2.2 | The word ‘instructions’ will be read as ‘advise’ in the first paragraph. |
| 18.2.1 | The line “The Contractor shall not remove the same from the Site without informing the Employer” will be read as “The Contractor shall not remove the same from the Site without approval of the Employer”. |

The Contractor shall commission the equipment (as described in para 2.6 of Section III) at site within 60 days of execution of agreement otherwise a non refundable daily penalty of Rs. 10000.00 (Rs. Ten thousand only) shall apply until the equipment is commissioned. |
| 18.8.1 | Replace first 2 line of 18.8.1 by “The Employer shall convene the
19.2 (h) and (i) The provisions concerning HIV-AIDS prevention **apply**

20 Replace “Employer” by “Engineer in charge”.

20.7 Replace “DRE for determination” by “DRE for decision”.

21. The Contractor shall carry out the following Initial Rectification and Periodic Maintenance Works, which are detailed in the Specifications: To assist the Contractor a list of Quantities of Initial Rectification Works has been included in Part V Clause D2 and a list of PM works has been included in Part V Clause E2 of the Technical Specifications as a guide. The contractor will need to assess the current road conditions and determine what works are needed to meet the Service level Criteria.

22. The Contractor shall carry out the following Minor Improvement Works, which are detailed in the Specifications and Schedule of Prices: **As detailed in Work Schedule 4 and Section F of the Technical Specification**

25.2 The Contractor **shall** establish a Self Control Unit

29.4 The word ‘borne’ will be read as recovered in last line.

35.1 The Contractor shall take out before the start date and maintain in effect the following insurances in the sums shown below:

<table>
<thead>
<tr>
<th>Insurance Type</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>All risk Policy with a value equivalent to accepted contract price.</td>
<td>In accordance with the Insurance Company requirements applicable to India</td>
</tr>
</tbody>
</table>

37.1 Replace the word ‘costs and expenses’ by ‘cost’.

39.1 The Time for Completion are the following:

- For whole of Works 5 years from the Start Date

  - Milestone 1 (end of 6/9 months) – The Contractor shall bring all defects to below the Intervention Standards within time specified in work schedule from the Start Date by completing all Initial Rectification Works.
  
  - Milestone 2 (end of Year 1) – The Contractor shall carry out all 1st year Periodic Maintenance Work, and all 1st year Minor Improvement Work as necessary to bring the road roughness to the required performance Criteria.
  
  - Milestone 3 (end of Year 2) – The Contractor shall carry out the Periodic Maintenance Work as specified in Schedule 3 for year 2 and all 2nd year Minor Improvement Works as necessary to comply with the contract roughness performance criteria.
  
  - Milestone 4 (end of Year 3) – The Contractor shall carry out the Periodic Maintenance Work as specified in Schedule 3 for year 3 to
comply with the contract roughness performance criteria.

- Milestone 5 (end of Year 4) – The Contractor shall carry out the remaining Periodic Maintenance Work as specified in Schedule 3 to comply with contract close out performance criteria.

39.3 For Initial Rectification Works (Milestone 1) the liquidated damages shall be \(\frac{1}{400}\)th (a four hundredth) of the Quoted Price of corresponding Scheduled Activity per calendar day of delay, of the payment normally due for the specific Works for which completion is delayed.

For Periodic Maintenance (Milestone 2 to 5) and Minor Improvement Works (Milestone 2 and 3) the liquidated damages shall be \(\frac{1}{1000}\)th (a thousandth) of the Quoted Price of corresponding Scheduled Activity per calendar day of delay, of the payment normally due for the specific Works for which completion is delayed.

40.3 For non-compliance with the performance Standards on road roughness at the Milestone measurement in accordance to Clause 40.3, the Contractor can either (a) correct the non compliance at his own cost for retesting within the timeframe agreed with the Engineer or (b) pay Liquidated Damages for non-complying sections at **Rs 100 per 100m lane section** of non-compliance. In the event that the Contractor agrees to correct the non compliance but fails to do so in the agreed timeframe, Liquidated Damages shall be imposed.

40.4 The maximum amount of Liquidated Damages shall be not more than 10% of the value of Initial Rectification, Periodic Maintenance or Minor Improvement work, respectively.

41.2 **Remove GC Clause 41.2 and insert the following:**

The Defect Liability Period for Works (or any part thereof) shall be twelve (12) months from the date of Certificate of Completion of the Works

41.6 The Defect also includes the work identified to be executed to bring the road service below intervention criteria.

42.1 The aggregate liability of the Contractor to the Employer, excluding payment reductions defined in GC 47.1, shall not exceed the amount of **twenty (20) percent** of contract amount

44.1 The payment of the Contract Price will be made in the following currencies: **Indian Rupees**

45.1 **Mobilization Advance up to a maximum 10% of accepted contract amount** is payable within 30 days of receipt by the Employer of the following documents

   (a) Performance Security
   (b) Bank Guarantee for an amount equal to the advance payment as provided in the GCC Clause 45.1
### Section VII Particular Conditions

#### 45.2 (c) Interim Payment Certificate

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>45.2</td>
<td>Add in last line after Employer “within 28 days of release of advance payment“</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
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<th></th>
<th></th>
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<tbody>
<tr>
<td>45.3</td>
<td>Recovery of Advance Payment will commence from the fourth (4th) month IPC payment, if contractor has received advance payment within the fourth (4th) month IPC payment. However if the advance payment is made later, recovery shall commence from the IPC payment for the month following the month in which advance payment was received. Recovery shall be made at the rate of 15% of the amount of each interim payment (but excluding Ordinary Maintenance Payment) due for the month subject to the entire advance payment being recovered fully by the Twenty Fourth (24th) month from the start date.</td>
</tr>
</tbody>
</table>

#### 46.5 Replace the second sentence with the following

The Lump-Sum price for the Emergency Works will be submitted by the Contractor to the Employer in each emergency pursuant to GC Clauses 29 and 61 and will be prepared based on the Specifications and on the unit prices included in the work Schedule 4 for similar items and for other items not covered under Schedule 4, shall be arrived as per Clause 61 and 63 of General Conditions of Contract and will remunerate all Emergency Activities.

#### 47.2 Initial Rectification and Periodic Maintenance Works will be measured on the following basis: on the basis of work outputs as detailed in item nos. 3.1.1, 3.1.2, 3.2.1 of Schedule 3.

#### 47.3 Minor Improvement Works will be measured on the following basis: on the basis of work inputs.

#### 47.4 The Emergency Works shall be approved by the Employer with the permission of SE/CE/ Engineer in Chief.

#### 48. Price adjustment applies with indices as on 28 days prior to bid submission

Price Adjustments shall be made on the following basis.

(a) Price Adjustment shall apply for Ordinary Maintenance, Initial Rectification, Minor Improvement, Periodic Maintenance, Emergency/Day Works, from the Start Date up to the Completion Date as certified by the Employer. Price adjustment shall not be applicable for work completed outside of stipulated timeframes (i.e. after the Intended Completion Date for PM/MI, inclusive of any approved extensions);

(b) Price adjustment shall not be applied to work valued on the basis of Current Cost / current prices/ Current SOR.

(c) Monthly Contract payments due to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates shall be adjusted for increase or decrease in cost of Labour, Materials, Fuels and, Local Materials in accordance with the formulae given below:
Ordinary Maintenance (Schedule 1) & Initial Rectification (Schedule 2):

\[ A_n = a + b \frac{WPI_n}{WPI_o} + c \frac{Bi_n}{Bi_o} + d \frac{Ce_n}{Ce_o} \]

Periodic Maintenance Work (Schedule 3)

\[ B_n = a + b \frac{WPI_n}{WPI_o} + c \frac{Bi_n}{Bi_o} + e \frac{L_n}{L_o} + f \frac{F_n}{F_o} \]

Minor Improvement (Schedule 4):

\[ C_n = a + b \frac{WPI_n}{WPI_o} + c \frac{Bi_n}{Bi_o} + d \frac{Ce_n}{Ce_o} + e \frac{L_n}{L_o} + f \frac{F_n}{F_o} \]

Daywork (Schedule 5)

\[ D_n = a + b \frac{WPI_n}{WPI_o} \]

where:

“A”, “B”, “C” and “D” are the adjustment multipliers to be applied to the value of the work carried out in month number “n” (with “n” being 1 to 60), for Ordinary Maintenance & Initial Rectification, Periodic Maintenance, Minor Improvements and Emergency Works (Provisional Quantities/Day work) respectively;

“a” is a fixed coefficient, representing the non-adjustable portion in contractual payments;

“b”, “c”, “d”, “e” and “f” are coefficients representing the estimated proportion of each cost element related to the execution of the Works (i.e. WPI, bitumen, cement, labour, and fuel).

The value of coefficients is as stated in the table below.

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Coefficient</th>
<th>Percentage Value</th>
<th>Cost Index Applicable to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Maintenance (OM)</td>
<td>a</td>
<td>15%</td>
<td>Non-adjustable portion of payments</td>
</tr>
<tr>
<td>&amp; Initial rectification (IR)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
### Particular Conditions

#### Bidder

Executive Engineer, Road Division .....

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<tr>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>b</td>
<td>45%</td>
<td>Wholesale Price Index (WPI)</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>35%</td>
<td>Bitumen</td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>5%</td>
<td>Cement</td>
</tr>
<tr>
<td>Periodic Maintenance (PM)</td>
<td>a</td>
<td>15%</td>
<td>Non adjustable portion of payments</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15%</td>
<td>WPI</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>35%</td>
<td>Bitumen</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>15%</td>
<td>Labour</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>15%</td>
<td>Fuel</td>
</tr>
<tr>
<td>Minor Improvements (MI)</td>
<td>a</td>
<td>15%</td>
<td>Non adjustable portion of payments</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15%</td>
<td>WPI</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>35%</td>
<td>Bitumen</td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>5%</td>
<td>Cement</td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>15%</td>
<td>Labour</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>15%</td>
<td>Fuel</td>
</tr>
<tr>
<td>Emergency/Day Works</td>
<td>a</td>
<td>15%</td>
<td>Non adjustable portion of Payments</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>85%</td>
<td>WPI</td>
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</table>

“L_n”, “Bi_n”, “Ce_n”, “F_n” and “WPI_n” are the prevailing indices or reference prices for Labour, Bitumen, Cement, Fuel and Wholesale Price Index respectively for the period “n” on the day 28 days prior to the last day of the period, being invoiced; and

“L_0”, “Bi_0”, “Ce_0”, “F_0” and “WPI_0” are the base cost indices or reference prices for Labour, Bitumen, Cement, Fuel and Wholesale Price Index respectively and shall be the indices prevailing 28 days before Bid opening.

The intended sources of indices detailed above shall be as outlined below. If the source for any of the indices is in doubt, it shall be determined by the Engineer in charge.

**Labour (L):** Consumer Price Index for industrial workers for Jamalpur centre as published by Labour Bureau, Ministry Of Labour, Government Of India, New Delhi.

**Bitumen (Bi):** Official retail price of bitumen at the IOCL Barauni.

**Fuel (F):** Official retail price of High Speed Diesel (HSD) at the existing consumer pumps of BPCL / IOCL / HPCL at Divisional Head...
Quarter town of the concerned road Division.

**WPI:** All India Wholesale Price Index (All Commodities) as published by the Office of the Economic Adviser to the Government of India, Ministry of Commerce and Industry.

**Cement(Ce):** The Whole Sale Price Index for Grey Cement as published by the Office of the Economic Adviser to the Government of India, Ministry of Commerce and Industry.

The total amount payable to the Contractor each month shall be:

$$\text{Amount Payable} = A_n \times (R_{OM} + R_{IR}) + B_n \times R_{PM} + C_n \times R_{MI} + D_n \times R_D$$

Where

- $R_{OM}$ = OM value payable for the month
- $R_{IR}$ = IR value payable for the month
- $R_{PM}$ = PM value payable for the month
- $R_{MI}$ = MI value payable for the month
- $R_D$ = Day works value payable for the month

The value of $R$ above shall be exclusive of seigniorage, VAT and other statutory taxes.

**Payments not subject to Price Escalation**

Payments made to the Contractor in respect of the following items will not be adjusted in accordance with Price Escalation:

(a) variations ordered by the Engineer in charge except where the variations so ordered are valued at rates lodged in Schedule 1, 2, 3 and 4 with the tender;

(b) payments made in regard to the return of retention money or security deposit

(c) net procurement cost for the purchase of the Patrol Maintenance Unit.

**51.1** The retention for Initial Rectification, Periodic Maintenance and Minor Improvement Works is fixed at five (5) percentage:

**51.2** GC Clauses 51.2 and 51.3 are substituted by the following.

51.2 (a) Upon issuing certificate of completion for Initial Rectification (IR), half of the amount retained under IR shall be repaid to the contractor and other half after twelve (12) months have passed and the Employer has certified that all defects notified to the Contractor have been corrected before the end of this period. On completion of IR works, the contractor may substitute balance half
of the retention money with an “on demand” Bank Guarantee

51.2 (b) Upon issuing certificate of completion of Minor Improvements (MI), half of the amount retained under MI shall be repaid to the contractor and other half after twelve (12) months have passed and the Employer has certified that all defects notified by the Engineer in charge to the Contractor have been corrected before the end of this period. On completion of MI works, the contractor may substitute balance half of the retention money with an “on demand” Bank Guarantee

51.2 (c) On completion of Periodic Maintenance (PM) works scheduled in a year, half of the amount retained under PM works in that year shall be repaid to the contractor and other half after twelve (12) months have passed and the Employer has certified that all defects notified to the Contractor have been corrected before the end of this period. On completion of PM works, the contractor may substitute balance half of the retention money with an “on demand” Bank Guarantee

| 51.3 | GC Clause 51.3 may be deleted. |
| 51.4 | GC Clause 51.4 may be re-numbered as 51.3, and following may be added at the end of the re-numbered Clause 51.3: |

For any particular Month, the total Payment reduction for non-compliance of Ordinary Maintenance shall not exceed the amount of the Monthly LS Payment for OM.

If the Contractor incurs a deduction to the Monthly Lump sum payment for OM as applicable under Clause C7 of the Technical Specification of:

(i) 25% or more of the possible monthly Lump Sum payment for

(a) any three consecutive months, or

(b) for any six months during the period of the Contract, or

(ii) 50% or more of the possible monthly Lump Sum payment for any one month

The Employer considers the above a fundamental breach of Contract and may terminate the Contract in accordance with Clause 59 of the General Conditions and Clause 59.2.2 (c) of the Particular Conditions, all the due amounts to the contractor will be retained.

<p>| 53.2.1 | The amount of the Advance payment security shall be the value of the advance payment amount. |
| 53.3.1 | The amount of the Performance Security is two (2) percent of Contract amount. Additional security may be required by the Employer in the event of an unbalanced bid. The cost of obtaining and maintaining the Security shall be included in the Lump Sum for OM (Schedule 1). |
| 53.3.2 | The form of guarantee is unconditional Bank Guarantee of the type |</p>
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| 53.3.3  | The word ‘issue’ will be read as ‘submit’.
| 57.1    | The following Drawings and/or Manuals are required at the following dates: |
|         | As built drawings for Culverts and Improvement Works – 60 days after completion |
|         | Bar Charts for Resurfacing Works – 30 days after completion |
| 57.2    | If the required documents are not supplied in accordance with PC 57.1, the amount to be withheld is **Rs 5,000 per event.** Payment reduction for non-conformance for successive months will be made as per conditions and clause C7 of Technical specification |
| 59.2.2(C)| The condition of persistent failure to execute the contract is given if and when the Contractor breaches Clause 40.4 or Clause 51.4 of the Particular Conditions or Clause C7 of the Technical Specifications, whichever occurs earlier. |
| 61.2    | Substitute Schedule of prices with Schedule of Prices/Current S.O.R. |
| 63.1.1  | The Employer has the right to propose a change in the contract: **Yes** |
| 63.1.2  | Contractor’s right to propose a change in the contract: **Yes** |
| 63.2.6  | The line “Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GC Sub-Clause 63.2.2.” is deleted. |
| 64.2    | The line “Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance” will be read as “Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Employer a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension **but not later than 28 days of the occurrence of the event or circumstances.**
SECTION VIII
Annex to Particular Conditions – Contract Forms

INDEX .......

Annex A: Letter of Acceptance
Annex B: Agreement Form
Annex C: Performance Bank Guarantee
Annex D: Bank Guarantee for Advance Payment
Annex E: Retention Security
ANNEX- A

Letter of Acceptance
(letterhead paper of the Employer)

________________________[date]

To: ____________________________________________ [name and address of the Contractor]

Dear Sir(s),

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 Bidders is hereby accepted by our Agency.

We accept/do not accept that __________________________ be appointed as the Dispute Review Expert.

We note that as per bid, you do not intend to subcontract any component of work.

[OR]

We note that as per bid, you propose to employ M/s. .......................................... as sub-contractor for executing ..................................................

[Delete whichever is not applicable]

You are hereby requested to furnish Performance Security including an additional security for unbalanced bid in terms of ITB clause27.4, for an amount of Rs._________ within 21 days in accordance with the Conditions of Contract using for that purpose form in Section VIII annex D and sign the contract, failing which action as stated in Para 34.2 of ITB will be taken.

Yours faithfully,

Authorized Signature
Name and Title of Signatory
Name of Agency

1 Delete "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.

2 To be used only if the Contractor disagrees in his Bid with the Dispute Review Expert proposed by the Employer in the "Instructions to Bidders."
ANNEX- B

AGREEMENT FORM

This Agreement made the …………………….day of………………………………………,

Between The …………………………………………………………………………………………………………..

(“The Employer”) of the one part, and …………………………………………………………………………….

[Name & address of Contractor]………………………………………………………………………………………… (“The Contractor”) of the other part.

Whereas the Employer is desirous that the Contractor execute Output and performance based Road contract for the maintenance of Roads ………………………………………………………………………………. .

(hereinafter called “The Works”) and the Employer has accepted the Bid by the Contractor for the execution of such Works and the remedying of any defects therein, at a contract price of Rs………………..

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<tr>
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<th>ROAD</th>
<th>DIVISION</th>
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<th>Length [km]</th>
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</tr>
</tbody>
</table>

NOW THIS AGREEMENT WITNESSETH and the Parties hereto agree as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the General condition hereafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. 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 aspects with the provisions of the contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein 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.

4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
   i) Letter of Acceptance
   ii) Contractor’s Bid
   iii) Section VI – General Conditions,
   iv) Section VII – Particular Conditions
   v) Section V – Technical Specifications (General and Supplementary Technical Specifications)
   vi) Appendix A – Drawings
   vii) Section IV – Works Schedule
viii) Quality Plan for Output and Performance Based Road Contract as per Clause A14.1 of the Technical Specifications
ix) Appendices to the Contract
x) Addenda issued during bid period
xi) Any other relevant documents listed in the Particular Conditions together with any post bid correspondence.

In witness whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

The Common Seal of ..............................

..........................................

was here unto affixed in the presence of:

Signed, sealed and delivered by the said ........................................
in the presence of:

Binding Signature of Employer

Binding Signature of Contractor

Total number of pages in this Agreement :
Total No. of Items in this Agreement :
Total No. of corrections in this Agreement :
Total No. of additions in this Agreement :
Total No. of omissions in this Agreement :
PERFORMANCE BANK GUARANTEE

ANNEX- C

To: ___________________________________________________ [name of Employer]
________________________________________________________ [address of Employer]

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 recognized bank 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 THEREFORE 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] 1 [in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ____________________ [amount of guarantee] 1 as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

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

Signature and seal of the guarantor ________________________________
Name of Bank ____________________________________________
Address ________________________________________________
Date ___________________________________________________

1 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

ANNEX D

To: ________________________________________ [name of Employer]
__________________________________________ [address of Employer]
___________________________________________ [name of Contract]

Gentlemen:

In accordance with the provisions of the General conditions, Sub-clause 51.1 ("Advance Payment") 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 obligor 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 there under 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: ____________________________

a) An amount shall be inserted by the bank representing the amount of the Advance Payment, and denominated in Indian Rupees.
Annex E

Retention Money Security

Demand Guarantee

[Bank’s Name, and Address of Issuing Branch or Office]

Beneficiary: [Name and Address of Employer]

Date: __________________

RETENTION MONEY GUARANTEE No.: __________________

We have been informed that ______________ [name of Contractor] (hereinafter called "the Contractor") has entered into Contract No. ______________ [reference number of the contract] dated ______________ with you, for the execution of ______________ [name of contract and brief description of Works and Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of [insert the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security] is to be made against a Retention Money guarantee.

At the request of the Contractor, we ______________ [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ______________ [amount in figures] ( ) [amount in words]¹ upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor used the advance payment for purposes other than the costs of mobilization in respect of the Works.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number ______ at ______________[name and address of Bank].

This guarantee shall expire, at the latest, 21 days after the date when the Employer issue the Performance Certificate. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

¹ The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Employer.
[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.
APPENDICES

- Appendix A – Drawings
- Appendix B – Asset Inventory Information
- Appendix C – Forms of Contract
- Appendix D – Rules & Procedure of DRE
- Appendix E – Terms of Reference for Videographic Survey
- Appendix F1 – Contractors Checklist on Environmental & Social Issues
- Appendix F2 – Environmental Management Action Plan
- Appendix F3 – Environmental Sensitive Areas for Particular Attention
APPENDIX A

INDEX MAP
NAME OF THE PROJECT: **Output and Performance Based Road Contract (OPRMC)**

**APPENDIX B – ASSET INVENTORY INFORMATION**

**CULVERT INVENTORY DETAILS FOR OPRMC**

<table>
<thead>
<tr>
<th>Structure identity</th>
<th>Location of structure</th>
<th>Type of structure</th>
<th>Dimensions</th>
<th>Comments</th>
</tr>
</thead>
</table>

**APPENDIX C - FORMS OF CONTRACT**

The Contractor is required under the terms of this Contract to establish a Quality Plan, part of which advises the Employer of inspections, programming and compliance reporting. The following forms are samples of details required in the operations of a Performance Based
Maintenance Contract. These sample forms are available to the Contractor and shall be used as part of his reporting requirement unless an alternative form is approved by the Employer. Over the term of the Contract, the Contractor shall improve and further enhance these forms and shall incorporate any changes to these forms as directed by the Employer.

**Form No. OM01 – Ordinary Maintenance Inspection Report**

To undertake monthly inspections of the roads under this contract and report all defects outside Intervention Criteria to the Employer.

**Form No. OM02 – Hazard Inspections Report**

The Contractor is required to complete weekly Hazard Inspections to ensure the carriageway remains safe at all times and does not present a hazard to the travelling public.

**Form No. OM03 - Bridge and Major Culvert Inspection Report**

To undertake a detailed inspection of all bridges and culverts within the first 3 months of signing the contract, then at regular 6 monthly intervals and after flooding and heavy rains. The Contractor shall undertake the inspection and report to the Employer.

**Form No. OM04 – Night Inspections Report**

The Contractor is required to complete a Night Inspections every 6 months to ensure the carriageway remains safe at all times and does not present a hazard to the travelling public.

**Form No. OM05 – Emergency Inspections Report**

The Contractor is required to conduct an Inspection on notification of Emergency Works, determine the treatment and estimate quantities for approval by the Employer.

**Form No. OM06 – Monthly Works Program**

The Contractor is required to complete a Monthly Works Program of maintenance activities to be undertaken during the following month and submit to the Employer. This schedule is be delivered by the 3rd working day of each month and shall include all activities outside Intervention Criteria and approved Emergency Works Items.

**Form No OM07 – Monthly Progress Report**

The Contractor is required to advise the Employer details of the quantity of work completed and an estimate of the costs to achieve compliance. This information is used in assessing the viability of future works, work method efficiencies and base information for the state-wide Road Maintenance Management System (RMMS).

By the 30th of each month the Contractor shall provide to the Employer full details of all repairs undertaken in each kilometre indicating the amount of work completed for each Item and the total cost of works for each kilometre, as required under Clause A13.1 of the Technical Specification.

**Form No OM08A – Maintenance Program Compliance Sheet**

Compliance against the Program shall be assessed for each month and shall be submitted on the due date of the Program. The form shall highlight the extent of works as scheduled in the Program for the month and the extent of the actual works completed.
Form No OM08B – Management Programme Compliance Sheet

Details of all compliances against the management requirements of the contract shall be detailed in OM08B and submitted along with Maintenance Program Compliance sheet.

Form No OM09 – Non-Conformance Report

Details of all non-conformances in respect to the Quality Plan and the Contract requirements shall be detailed in the Form OM09. A copy of the completed form shall be submitted to the Employer within 7 days of registering the non-conformances. This form should be used in a constructive manner so as to continually improve the Contractor’s management systems and processes.

Form No OM10 – Condition Survey – Field data Collection Sheet

The Contractor shall record road and asset condition survey information using Form OM10. This shall include the initial condition survey per Clause A13.2.1 of the Technical Specification.

Form No. OM11 – Work Order Form

The Employer shall issue Work Orders using this Form for the authorizing the execution of Minor Improvement and Emergency Works.

Form No. OM12 – Monthly Progress Report for Initial Rectification works.

The Contractor is required to advise the Employer details of the quantity of work completed and an estimate of the costs to achieve compliance. This information is used in assessing the future works.

By the 30th of each month the Contractor shall provide to the Employer full details of all repairs undertaken in each kilometre indicating the amount of work completed for each Item and the total cost of works for each kilometre.

Form No. OM13 – Initial Rectification Service Level Compliance Sheet.

Compliance against the Program shall be assessed for each month and shall be submitted on the due date of the Program. The form shall highlight the extent of actual works completed.
Government Of Bihar  
Road Construction Department  

ORDINARY MAINTENANCE INSPECTION REPORT  
Follow instructions for observing defects and reporting required  

<table>
<thead>
<tr>
<th>No.</th>
<th>Standard work item</th>
<th>Work Units</th>
<th>Units of work required in each kilometre and priority</th>
<th>Total units</th>
<th>Comments</th>
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<td>(c)</td>
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</thead>
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<td>OM400 Vegetation</td>
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<tr>
<td>Grass Control</td>
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<tr>
<td>a) Roadside – General Tidy</td>
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<tr>
<td>b) Medians and Traffic Islands</td>
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<tr>
<td>c) Road Intersections - Maintain Sight Distance</td>
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<tr>
<td>d) Clear near safety signs, kilometre posts and roadside furniture</td>
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<tr>
<td>OM402 Tree and Shrub Management</td>
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<tr>
<td>OM500 Furniture</td>
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<td>OM501 Signs Maintenance</td>
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<td>OM502 Guardstones</td>
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<tr>
<td>OM503 Guideposts, Distance Markers, Delineator,</td>
<td>No</td>
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</tr>
</tbody>
</table>
### Painted Trees

**OM504** Footways  \(m^2\)

**OM505** Roadmarkings and Cats Eyes  \(\text{No}\)

### OM600 Structures

**OM601** Bridge Maintenance

- **a)** Cleaning and clearing of deck, footway, expansion joints and down pipes  \(\text{Hr}\)
- **b)** Repair and painting including repair of spalled posts and parapets  \(\text{Hr}\)

Incorporated into work schedule by: ……………………………… Signed by…………………………..on……./…../…./..../.../..../.../..../.../...File this form

### Standard work item

**OM700 Operational Servicing**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Work</th>
<th>Units of work required in each kilometre and priority</th>
<th>Total units in next</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>OM701</td>
<td>Land Slip Clearing</td>
<td></td>
<td>(m^3)</td>
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<td></td>
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<tr>
<td>OM702</td>
<td>Emergency Works and Services</td>
<td></td>
<td>(\text{No})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OM703</td>
<td>Vandalism Repair</td>
<td></td>
<td>(\text{Hr})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OM704</td>
<td>Road Obstructions/ Dead Animals</td>
<td></td>
<td>(\text{Lm})</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Incorporated into work schedule by: ……………………………… Signed by…………………………..on……./…../…./.../..../.../..../.../...File this form
Instructions for use of Ordinary Maintenance Inspection Report (Form OM01)

Use separate Form OM01 for each 10km of a road. Use a separate form for each road.
You may use the Form for longer lengths by making each kilometre marked on the Form represent 2km, 3km, etc. This is useful when there are long lengths with similar defects.

Fill in header details. The inspector signs the Form when completed that meets the set interaction levels.

Record the amounts of each work item required on Form OM01 for Ordinary Maintenance or Form RM02 for Bridge Structure repair.

Note the intervention time required for each work item. Record the total amount of each work item required in the appropriate column as:

- Total units in next:
  - now => immediate/within 1 week
  - 2w => within 2 weeks
  - 1m => within 4 weeks
  - 2m => within 8 weeks

Record comments on special requirements as appropriate or if works Emergency Works is required.

Forward a copy the completed Form to the maintenance supervisor responsible for the road to gather with your revised schedule of work for approval.
<table>
<thead>
<tr>
<th>Location</th>
<th>OM Code</th>
<th>Description</th>
<th>Completion Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Submitted by Contractor

Name: ............. | Signature: .......

Approved

Name: ............. | Signature: .......

Date....../....../...... | Designation:.......  

Date....../....../...... | Designation:.......
**BRIDGE AND MAJOR CULVERT INSPECTION REPORT**

Follow instruction for observing and reporting defects (see back)

Use a separate form for each bridge of major culvert

---

**Road from :…………………………..to:………………….Name of the Road………………………….**

**Bridge Name:……………………………………………..Stream crossed………………………….**

**Inspector Name:………………………………………..Position………………………………………….**

**Tick items inspected:**

<table>
<thead>
<tr>
<th>Approaches</th>
<th>Signs</th>
<th>Barrier Stones</th>
<th>Date of Inspection:………/……./……….</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road drainage</td>
<td>Deck &amp; footway</td>
<td>Superstructure</td>
<td>Bearings</td>
</tr>
<tr>
<td>Roadway</td>
<td>Joints Deck</td>
<td>Paint</td>
<td>Retaining walls</td>
</tr>
<tr>
<td>Guard-rails</td>
<td>Drainage</td>
<td>Substructure</td>
<td>Erosion</td>
</tr>
</tbody>
</table>

**Record Ordinary maintenance required:**

<table>
<thead>
<tr>
<th>Standard work item</th>
<th>Work Required</th>
<th>Total units in next 2w</th>
<th>1m</th>
<th>3m</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OM301 Surface Drains and Verges</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Surface drains cleaning</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Unlined drain debris remove</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Unlined drain re-grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lined drain debris remove</td>
<td></td>
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<tr>
<td>Lined drain repair</td>
<td></td>
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</tbody>
</table>

| **OM302 Culverts and Pits Cleaning and Storm water Drain** |
| Culvert and pits cleaning | | | | | |
Culvert entrance debris
Culvert barrel debris
Drainage pit debris

**OM 303 Culvert and Pits Repair**
- Culvert pit repair
- Culvert wing wall repair
- Culvert apron repair
- Culvert barrel repair
- Drainage pit repair
- Earthwork repair

**OM304 Stream Maintenance**
- Maintenance of stream
- Cleaning debris

<table>
<thead>
<tr>
<th>Standard work item</th>
<th>Work</th>
<th>Unit</th>
<th>Required</th>
<th>Total units in next</th>
<th>Comments</th>
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<tbody>
<tr>
<td>No.</td>
<td>Name</td>
<td></td>
<td></td>
<td>now</td>
<td>2w</td>
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<tr>
<td>OM601 Bridge Structure</td>
<td>Joint sealant repair</td>
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<tr>
<td></td>
<td>Concrete spall repair</td>
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<tr>
<td></td>
<td>Bridge deck and joint</td>
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<tr>
<td></td>
<td>Bridge deck drainage</td>
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<td></td>
<td>Hand rail repair</td>
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<td></td>
<td>Bridge repaint</td>
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<td>Bridge minor structure</td>
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**Details of Other Items**
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<tr>
<th>Is higher level inspection required?</th>
<th>Urgent work required:</th>
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<tbody>
<tr>
<td>Yes ☐ No ☐</td>
<td>………………………………………</td>
</tr>
<tr>
<td>Why? …………………………………</td>
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<td>………………………………………</td>
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Yes ☐ No ☐
## GOVERNMENT OF BIHAR
## ROAD CONSTRUCTION DEPARTMENT
### Night Inspection

<table>
<thead>
<tr>
<th>Contractors Name: .................................................................</th>
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</table>

<table>
<thead>
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<th>Contract No ..................................</th>
<th>Contract Title ..................................</th>
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</table>

<table>
<thead>
<tr>
<th>Date of Inspection .........../....../.......</th>
<th>Time of Start ................................</th>
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</table>

<table>
<thead>
<tr>
<th>Road Inspected: ..................................</th>
<th>Km ......................... to Km ..................</th>
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<table>
<thead>
<tr>
<th>Location</th>
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<th>Completion Date</th>
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Submitted by Contractor

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<th>Signature: .......</th>
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<th>Signature: .......</th>
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Date...../....../..... | Designation:....... | Date...../....../..... | Designation:....... |

Approved

<table>
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<th>Signature: .......</th>
<th>Name: ..........</th>
<th>Signature: .......</th>
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</table>

Date...../....../..... | Designation:....... | Date...../....../..... | Designation:....... |
GOVERNMENT OF BIHAR  
ROAD CONSTRUCTION DEPARTMENT  
Emergency Works Inspection  

<table>
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<th>FORM OM05</th>
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</tr>
<tr>
<td>Contract No ………………………… Contract Title …………………………</td>
</tr>
<tr>
<td>Location Chainage: Km from: ……………………Km to: ………………………</td>
</tr>
</tbody>
</table>

DESCRIPTION OF EMERGENCY EVENT

|………………………………………………………………………………………………|
|………………………………………………………………………………………………|
|………………………………………………………………………………………………|
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TREATMENT (ESTIMATED WORK ITEMS & QUANTITIES)

|………………………………………………………………………………………………|
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|………………………………………………………………………………………………|
|………………………………………………………………………………………………|

Submitted by Contractor

| Name: ………….. | Signature: ……… | Name: …………… | Signature: ………|

Approved

| Date……./…./…… | Designation:…… | Date……./…./…… | Designation:……|
Government of Bihar
Road Construction Department

Form OM06

ROAD NAME.....................

MONTHLY WORKS PROGRAM

Contractor : ...........................................    Road: ......................................................

Period from : ................./............./............. to ................./............./.............

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Location</th>
<th>Gang size</th>
<th>Equipment</th>
<th>Quantity Man / day</th>
<th>Dates</th>
</tr>
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<tbody>
<tr>
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</table>

Planned by: .................................................................

On ................./............./.............

Name
Signature

Approved by: .................................................................

On ................./............./.............

Name
Signature

Total Works Completed

August 2013
Government of Bihar - Road Construction Department

MONTHLY PROGRESS REPORT (Form OM04)

Road No. [ ]

Road Name from .................................. to ..................................

Period for the month of ..................................

<table>
<thead>
<tr>
<th>Standard work item</th>
<th>Work</th>
<th>Previous Quantity</th>
<th>Quantity (Month)</th>
<th>Quantity (Total)</th>
<th>Rs. (Previous)</th>
<th>Rs. (Month)</th>
<th>Rs. (Total)</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1 Pavement Maintenance</td>
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<td>OM100 Sealed Surface</td>
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</tr>
<tr>
<td>OM101 Pothole patching</td>
<td>m²</td>
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</tr>
<tr>
<td>OM102 Regulation of wheel ruts and depressions</td>
<td>m²</td>
<td></td>
<td></td>
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<tr>
<td>OM103 Crack sealing</td>
<td>Lm</td>
<td></td>
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<td>OM104 Surface Treatment</td>
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</tr>
<tr>
<td>(a) Loss of aggregate (Surface ravelling)</td>
<td>m²</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(b) bleeding / flushing</td>
<td>m²</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(c) crocodile cracking</td>
<td>m²</td>
<td></td>
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</tr>
<tr>
<td>OM105 Pavement cleaning</td>
<td>m²</td>
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<tr>
<td>OM106 Edge repair</td>
<td>m²</td>
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</table>
### OM200 Shoulder

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity (Month)</th>
<th>Total Quantity</th>
<th>Rs. (Prev. Month)</th>
<th>Rs. (Total)</th>
<th>Rs. (Mont)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM201</td>
<td>Unsealed Shoulder</td>
<td>Lm</td>
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</tr>
<tr>
<td></td>
<td>(a) Drop off from edge of seal to shoulder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(b) Roughness, Scouring or Potholes</td>
<td>Lm</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(c) Holding water</td>
<td>Lm</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>OM202</td>
<td>Power grading of shoulders</td>
<td>km</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>OM203</td>
<td>Embankment and batter repair</td>
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</tbody>
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### Standard work item

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity (Month)</th>
<th>Total Quantity</th>
<th>Rs. (Prev. Month)</th>
<th>Rs. (Total)</th>
<th>Rs. (Mont)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| OM 300 Drainage
| OM301 | Surface Drains and Verges                        | Lm   |                  |                |                   |             |            |          |
| OM302 | Culvert Pit Cleaning and Strom                   | Lm   |                  |                |                   |             |            |          |
| OM303 | Culvert and Pit Repair                           |      |                  |                |                   |             |            |          |
| OM304 | Stream Maintenance                               | m²   |                  |                |                   |             |            |          |
| OM 700 Operational Servicing
| OM701 | Land Slip Clearing                               | m³   |                  |                |                   |             |            |          |
| OM702 | Emergency Works and Services                     | No   |                  |                |                   |             |            |          |
| OM803 | Vandalism Repair                                 | Hr   |                  |                |                   |             |            |          |
| OM804 | Litter control / Dead animals                    | Lm   |                  |                |                   |             |            |          |

### 2. Roadside Maintenance

<p>| OM400 Vegetation |</p>
<table>
<thead>
<tr>
<th>Bidder</th>
<th>Executive Engineer, Road Division</th>
<th>Bidder</th>
<th>Executive Engineer, Road Division</th>
</tr>
</thead>
</table>

### OM401 Grass Control

| OM402 Tree and shrub management |

### OM500 Road Furniture

| OM501 Signs maintenance No |
| OM502 Guardstones Lm |
| OM503 Guideposts, Distance Markers, No |
| OM504 Footways m² |
| OM505 Roadmarking and Cats Eyes No |

### OM600 Structures

| OM 601 Bridge Maintenance Hr |

### 3. Bridge Maintenance

| Progress prepared by: Signatur |
| Checked by: Signatur |
| Approved for RCD by: Signatur |

Dates:
- Progress: \[ \text{on } \ldots / \ldots / \ldots \] / \ldots / \ldots / \ldots
- Checked: \[ \text{on } \ldots / \ldots / \ldots \] / \ldots / \ldots / \ldots
- Approved: \[ \text{on } \ldots / \ldots / \ldots \] / \ldots / \ldots / \ldots
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<thead>
<tr>
<th>REF</th>
<th>STANDARD JOB</th>
<th>DISTANCE (i.e. 3 is between 3km and 4km stones)</th>
<th>DETAILS (Non-compliance Report etc.)</th>
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</thead>
<tbody>
<tr>
<td>OM101</td>
<td>Pothole Patching</td>
<td>0</td>
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<td>OM102</td>
<td>Regulation</td>
<td>1</td>
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<td>OM103</td>
<td>Crack Sealing</td>
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<td>OM104</td>
<td>Surface Treatment</td>
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<td>OM105</td>
<td>Pavement</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OM106</td>
<td>Edge Repair</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>OM107</td>
<td>Digout Repair</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>OM108</td>
<td>Concrete Pav</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>OM201</td>
<td>Shoulder Repair</td>
<td>8</td>
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<td>OM202</td>
<td>Power Grading</td>
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<td>OM301</td>
<td>Drains Cleaning</td>
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<tr>
<td>OM302</td>
<td>Culvert Cleaning</td>
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<tr>
<td>OM303</td>
<td>Culverts Repair</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>OM304</td>
<td>Stream</td>
<td>3</td>
<td></td>
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<tr>
<td>OM401</td>
<td>Grass Control</td>
<td>4</td>
<td></td>
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<tr>
<td>OM402</td>
<td>Tree Trimming</td>
<td>5</td>
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<td>OM501</td>
<td>Sign Maintenance</td>
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<tr>
<td>OM502</td>
<td>Guardstones</td>
<td>7</td>
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<td>OM503</td>
<td>Distance Markers</td>
<td>8</td>
<td></td>
</tr>
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<td>OM504</td>
<td>Footways</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>OM505</td>
<td>Rd Marking &amp; CE</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>OM601</td>
<td>Bridge</td>
<td>1</td>
<td></td>
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<tr>
<td>OM701</td>
<td>Land Slip</td>
<td>2</td>
<td></td>
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<tr>
<td>OM702</td>
<td>Emergency Works</td>
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<td>OM703</td>
<td>Vandalism Repair</td>
<td>4</td>
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<tr>
<td>OM704</td>
<td>Road Obs &amp; DA</td>
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## MANAGEMENT PROGRAM COMPLIANCE SHEET (OM 08 B)

**Contract No.**

**Road**

**From**

**To**

**Contractor**

**Inspector**

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Management Requirements</th>
<th>Details (Compliance / Non Compliance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial condition report</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Milestone Completion report</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>As built drawings for culverts and improvement works</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Bar charts for resurfacing works</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Environmental compliance</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Ordinary Maintenance inspection reports</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Weekly Hazard Inspection reports</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Bridge and major culvert inspection reports</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Night Inspection reports</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Monthly works programme</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Maintenance programme compliance report</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Any other report</td>
<td></td>
</tr>
</tbody>
</table>

**Employer**

Name: [Signature]

**Bidder**

[Signature]

**Executive Engineer, Road Division**
## NON-CONFORMANCE REPORT

**Form OM9**

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
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<td><strong>Report No:</strong></td>
<td>…………..</td>
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<tr>
<td><strong>CONTRACTOR:</strong></td>
<td>…………..</td>
</tr>
<tr>
<td><strong>CONTRACT No:</strong></td>
<td>…………..</td>
</tr>
<tr>
<td><strong>ROAD:</strong></td>
<td>…………..</td>
</tr>
</tbody>
</table>

### Description of Non-Conformance:

- …………..
- …………..
- …………..
- …………..
- …………..
- …………..

### Corrective Action:

- …………..
- …………..
- …………..
- …………..
- …………..
- …………..

**Date of Anticipated Completion:** …………..

**Checked By:**

NAM SIGNATU

**Date of Actual Completion:** …………..

**EMPLOYER:**

NAM SIGNATU
## Condition Survey – Field Data Collection

**Form 0M10**

**Sheet**

**Date:** ............... **Road No:** ............... **Road Name:** ..................

**Chainage:** .............. to ..............

<table>
<thead>
<tr>
<th>Standard Work Item</th>
<th>Kms</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pothole</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>Pothole</td>
<td>No.</td>
<td></td>
</tr>
<tr>
<td>Dep &amp; Rut Patch</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>Crack Sealing</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>Edge Breaks&gt;100mm</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>(a) Stripping+Ravelling</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>(b) Bleeding</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>(c) Crocodile</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>(d) Delamination</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>Culvert Cleaning</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Culvert Painting</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Culvert+Drain Repair</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Guard Stone Paint</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Guard Stone Replace</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Dist. Markers Paint</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Dist. Markers Repair/Replace</td>
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<td></td>
</tr>
<tr>
<td>(a) Low Shoulder</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>(b) High Shoulder</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>(c) Spot Shoulder</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>Dig-Out</td>
<td>m²</td>
<td></td>
</tr>
<tr>
<td>Trench Filling</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Damage Signs</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Missing Signs</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Bridge Parapet Repair</td>
<td>No</td>
<td></td>
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## WO............

**GOVERNMENT OF BIHAR**  
**ROAD CONSTRUCTION DEPARTMENT**  
**WORKS ORDER**  
FORM OM11

<table>
<thead>
<tr>
<th>Contractors Name:</th>
<th>..........................................................................................................</th>
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<tr>
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<tr>
<td>Subject Description</td>
<td>..........................................................................................................</td>
</tr>
<tr>
<td>Location Name</td>
<td>..........................................................................................................</td>
</tr>
<tr>
<td>Location Chainage: Km from:</td>
<td>Km to:</td>
</tr>
</tbody>
</table>

### DESCRIPTION AND DETAILS

...............................................................................................................  
...............................................................................................................  
...............................................................................................................  
...............................................................................................................  
...............................................................................................................  
...............................................................................................................  
...............................................................................................................  

Works Completed  
Endorsed by Officer  
Name: ...........................................  
Signed by: | Date:  
.........................  

Issued by  
Received by Contractor  
Name: ..............  Signature: ...........  
Date....../....../......  Designation:...........  
Name: ..............  Signature: ...........  
Date....../....../......  Designation:...........
## MONTHLY PROGRESS REPORT FOR INITIAL RECTIFICATION WORKS

**Road No.** [ ] **Road Name**

**Period for the month of**

<table>
<thead>
<tr>
<th>Standard work item Description</th>
<th>Work</th>
<th>Kilometers</th>
<th>Total Cost in Rs.</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Unit</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1. Pavement Repairs such as Pot hole patching, Ruts and Depressions, Stripping, Crack sealing and Crocodile Cracking, Delamination, Edge Repair, Digouts etc.,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tack Coat</td>
<td>m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bituminous Macadam</td>
<td>m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Semi-Dense Bituminous Concrete</td>
<td>m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Minor Dig outs</td>
<td>m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Light Surfacing Seal</td>
<td>m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Slurry Seal</td>
<td>m²</td>
<td></td>
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<tr>
<td>7</td>
<td>Edge repair</td>
<td>Lm</td>
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## 2. Shoulder

<table>
<thead>
<tr>
<th></th>
<th>Operation</th>
<th>Unit</th>
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<tr>
<td>1</td>
<td>Repairs to shoulders</td>
<td>cum</td>
</tr>
<tr>
<td>2</td>
<td>Repairs to low shoulder</td>
<td>cum</td>
</tr>
<tr>
<td>3</td>
<td>Any other activity</td>
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## 3. Removal of Jungle

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<thead>
<tr>
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<th>Type of Jungle</th>
<th>Unit</th>
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<tr>
<td>1</td>
<td>Light Jungle</td>
<td>m²</td>
</tr>
<tr>
<td>2</td>
<td>Scrub Jungle</td>
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<tr>
<td>3</td>
<td>Heavy jungle</td>
<td>m²</td>
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<tr>
<td>4</td>
<td>Any other activity</td>
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## 4. Cross Drainage Works

<table>
<thead>
<tr>
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<th>Material</th>
<th>Unit</th>
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<tr>
<td>1</td>
<td>Concrete</td>
<td>m³</td>
</tr>
<tr>
<td>2</td>
<td>Brick Masonry</td>
<td>m³</td>
</tr>
<tr>
<td>3</td>
<td>Random Rubble Masonry</td>
<td>m³</td>
</tr>
<tr>
<td>4</td>
<td>Plastering with Cement Mortar</td>
<td>m²</td>
</tr>
<tr>
<td>5</td>
<td>Pointing with Cement Mortar</td>
<td>m²</td>
</tr>
<tr>
<td>6</td>
<td>Clearing of Vents</td>
<td>Nos/ m³</td>
</tr>
<tr>
<td>7</td>
<td>Grouted Pitching</td>
<td>m³</td>
</tr>
<tr>
<td>8</td>
<td>White Washing</td>
<td>m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9</td>
<td>Synthetic Enamel Paint</td>
<td>m²</td>
</tr>
<tr>
<td>10</td>
<td>Any other activity</td>
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</table>

5. **Road Safety and Informatory items**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1</td>
<td>KM Stones</td>
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<tr>
<td>2</td>
<td>Guide/Guard Stones</td>
<td>nos.</td>
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<tr>
<td>3</td>
<td>Sign/Caution Boards</td>
<td>nos.</td>
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<tr>
<td>4</td>
<td>Information Boards (Village name Boards, Junction Boards)</td>
<td>nos.</td>
</tr>
<tr>
<td>5</td>
<td>Any other activity</td>
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6. **Road Marking Items**

<p>| | | |</p>
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<tr>
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<th></th>
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<tbody>
<tr>
<td>1</td>
<td>Centre line Marking</td>
<td>m²</td>
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<tr>
<td>2</td>
<td>Edge marking</td>
<td>m²</td>
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<td>3</td>
<td>Pavement Markers (Road Studs)</td>
<td>nos.</td>
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<td>4</td>
<td>Any other activity</td>
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### INITIAL RECTIFICATIONS SERVICE LEVEL COMPLIANCE SHEET (OM13)

**CONTRACT No:**

**INITIAL RECTIFICATIONS SERVICE LEVEL COMPLIANCE SHEET (OM13)**

**Page:** .... of ....  
**Date:**

**RO AD:**  
**FROM:**  
**TO:**  
**INSPECTOR:**

<table>
<thead>
<tr>
<th>REF</th>
<th>items</th>
<th>DISTANCE (i.e. 3 is between 3km and 4km stones)</th>
<th>DETAILS (Non-compliance Report etc.)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7 8 9 10</td>
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</tr>
<tr>
<td>1.</td>
<td>Bituminous Pavement Repairs</td>
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<td></td>
</tr>
<tr>
<td>2.</td>
<td>Unsealed Shoulder</td>
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</tr>
<tr>
<td>3.</td>
<td>Clearing of Jungle</td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>Cross Drainage Works</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Culverts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b) Minor Bridges</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(c) Major Bridges</td>
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</tr>
<tr>
<td>5.</td>
<td>Road Safety, Informatory and Road furniture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Road Marking Items</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D - RULES AND PROCEDURES FOR THE FUNCTIONS OF THE
DISPUTES REVIEW EXPERT (DRE)
(Refer Clause 6 of the Conditions of Contract)

1. Except for providing the services required hereunder, the DRE shall not give any advice to 
either party concerning conduct of the Works. The DRE:

(a) shall have no financial interest in any party to the Contract, or a financial interest in the 
Contract, except for payment for his services;

(b) shall have had no previous employment by, or financial ties to, any party to the 
Contract, except for fee-based consulting services on other projects, all of which must be 
disclosed in writing to both parties prior to selection as DRE;

(c) shall have disclosed in writing to both parties prior to selection as DRE any and all 
recent or close professional or personal relationships with any director, officer, or 
employee of any party to the Contract, and any and all prior involvement in the project to 
which the Contract relates;

(d) shall not, while serving as DRE, be employed whether as a consultant or otherwise by 
either party to the Contract, except as a DRE, without the prior consent of the parties;

(e) shall not, while serving as DRE, engage in discussion or make any agreement with any 
party to the Contract, regarding employment whether as a consultant or otherwise either 
after the Contract is completed or after service as DRE is completed;

(f) shall be and remain impartial and independent of the parties and shall disclose in writing 
to the Employer or the Contractor, any fact or circumstance that might be such as to cause 
either the Employer or the Contractor to question the continued existence of the 
impartiality and independence required of a DRE; and

(g) shall be fluent in the language of the Contract.

2. Except for its participation in DRE's activities as provided in the Contract and in this 
Agreement, none of the Employer or the Contractor shall solicit advice or consultation from the 
DRE on matters dealing with the conduct of the Works.

3. The Contractor shall:

(a) Furnish to the DRE a copy of all documents that he may request including Contract 
documents, progress reports, variation orders, and other documents pertinent to the 
performance of the Contract.

(b) In cooperation with the Employer, coordinate the Site visits of the DRE, including 
conference facilities, and secretarial and copying services.

4. The DRE shall begin his activities following the signing of a DRE's Declaration of Acceptance, 
and he shall terminate these activities as set forth below:

(a) The DRE shall terminate his regular activities when either (i) the Defects Liability 
Period referred to in Sub-Clause 41 (or, if there are more than one, the Defects Liability
Period expiring last) has expired, or (ii) the Employer has expelled the Contractor from the Site, and when, in either case, the DRE has communicated to the parties his Recommendations on all disputes previously referred to him.

(b) Once the DRE has terminated his regular activities as provided by the previous paragraph, the DRE shall remain available to process any dispute referred to him by either party. In case of such a referral, the DRE shall receive payments as provided in paragraphs 7 (a) (ii), (iii), and (iv).

5. The DRE shall not assign or subcontract any of his work under these Rules and Procedures. However, the DRE may in his/her discretion decide to seek independent expert advice on a particular specialized issue to assist in reaching a Recommendation, and the cost of obtaining any such expert opinion(s) shall be shared equally by the Employer and the Contractor in accordance with the procedure specified in paragraph 7 (d) below.

6. The DRE is an independent contractor and not an employee or agent of either the Employer or the Contractor.

7. Payments to the DRE for his services shall be governed by the following provisions:

(a) The DRE will receive payments as follows:

(i) A retainer fee per calendar month equivalent to three times the daily fee established from time to time for arbitrators under the Administrative and Financial Regulations of the International Centre for Settlement of Investment Disputes (the ICSID Arbitrator's Daily Fee), or such other retainer as the Employer and Contractor may agree in writing. This retainer shall be considered as payment in full for:

(A) Being available, on seven days' notice, for Site visits requested by either party.

(B) Being conversant with all project developments and maintaining relevant files.

(C) All office and overhead expenses such as secretarial services, photocopying, and office supplies (but not including telephone calls, faxes, and telexes) incurred in connection with the duties as a DRE.

(D) All services performed hereunder except those performed during the days referred to in paragraph (ii) below.

(ii) A daily fee equivalent to the ICSID Arbitrator's Daily Fee, or such other daily fee as the Employer and Contractor may agree in writing. This daily fee shall only be payable in respect of the following days and shall be considered as payment in full for:

(A) Each day up to a maximum of two days of travel time in each direction for the journey between the DRE's home and the Site.

(B) Each day on Site.

(iii) Expenses. In addition to the above, all reasonable and necessary travel
expenses (including less than first-class air fare, subsistence, and other direct travel expenses) as well as the cost of telephone calls, faxes, and telexes incurred in connection with the duties as DRE shall be reimbursed against invoices. Receipts for all expenses in excess of Rs 2000 (rupees Two thousand) shall be provided.

(iv) Reimbursement of any taxes that may be levied in the country of the Site on payments made to the DRE (other than a national or permanent resident of the country of the Site) pursuant to this paragraph 8.

(b) Escalation. The retainer and fees shall remain fixed for the period of the DRE's term.

(c) Phasing out of monthly retainer fee. Beginning with the next month after the Certificate of Completion referred to in Clause 55 (or, if there are more than one, the one issued last) has been issued, the DRE shall receive only one-third of the monthly retainer fee. Beginning with the next month after the Board has terminated its regular activities pursuant to paragraph 4 (a) above, the DRE shall no longer receive any monthly retainer fee.

(d) Payments to the DRE shall be shared equally by the Employer and the Contractor. The Contractor shall pay the DRE's invoices within 30 calendar days after receipt of such invoices and shall invoice the Employer (through the monthly statements to be submitted in accordance with Clause 49 of the General conditions) for one-half of the amounts of such invoices. The Employer shall pay such Contractor's invoices within the time period specified in the Contract for other payments to the Contractor by the Employer.

(e) Failure of either the Employer or the Contractor to make payment in accordance with this Agreement shall constitute an event of default under the Contract.

(f) Notwithstanding such event of default, and without waiver of rights therefrom, in the event that either the Employer or the Contractor fails to make payment in accordance with these Rules and Procedures, the other party may pay whatever amount may be required to finance the activities of the DRE. The party making such payments, in addition to all other rights arising from such default, shall be entitled to reimbursement of all sums paid in excess of one-half of the amount required to finance the activities of the DRE, plus all costs of obtaining such sums.

8. DRE Site Visits:

(a) The DRE shall visit the Site and meet with representatives of the Employer and the Contractor at regular intervals, at times of critical construction events, at the written request of either party, and in any case not less than three times in any period of 12 months. The timing of Site visits shall be as agreed among the Employer, the Contractor, and the DRE, but failing agreement shall be fixed by the DRE.

(b) Site visits shall include an informal discussion of the status of the construction of the Works, an inspection of the Works, and the review of any Requests for Recommendation made in accordance with paragraph 10 below. Site visits shall be attended by personnel from the Employer and the Contractor.

(c) At the conclusion of each Site visit, the DRE shall prepare a report covering his activities during the visit and shall send copies to the parties.
9. Procedure for Dispute Referral to the DRE:

(a) If either party objects to any action or inaction of the other party, the objecting party may file a written Notice of Dispute to the other party stating that it is given pursuant to Clause 6 and stating clearly and in detail the basis of the dispute.

(b) The party receiving the Notice of Dispute will consider it and respond in writing within 14 days after receipt.

(c) This response shall be final and conclusive on the subject, unless a written appeal to the response is filed with the responding party within seven days after receiving the response. Both parties are encouraged to pursue the matter further to attempt to amicably settle the dispute.

(d) When it appears that the dispute cannot be resolved without the assistance of the DRE, or if the party receiving the Notice of Dispute fails to provide a written response within 14 days after receipt of such Notice, either party may refer the dispute to the DRE by written Request for Recommendation to the DRE. The Request shall be addressed to the DRE, with copies to the other party and it shall state that it is made pursuant to Clause 6.

(e) The Request for Recommendation shall state clearly and in full detail the specific issues of the dispute to be considered by the DRE.

(f) When a dispute is referred to the DRE, and the DRE is satisfied that the dispute requires his assistance, the DRE shall decide when to conduct a hearing on the dispute. The DRE may request that written documentation and arguments from both parties be submitted to him before the hearing begins. The parties shall submit insofar as possible agreed statements of the relevant facts.

(g) During the hearing, the Contractor and the Employer shall each have ample opportunity to be heard and to offer evidence. The DRE's Recommendations for resolution of the dispute will be given in writing to the Employer and the Contractor as soon as possible, and in any event not less than 56 days after receipt by the DRE of the written Request for Recommendation.

10. Conduct of Hearings:

(a) Normally hearings will be conducted at the Site, but any location that would be more convenient and still provide all required facilities and access to necessary documentation may be utilized by the DRE.

(b) The Employer and the Contractor shall be given the opportunity to have representatives at all hearings.

(c) During the hearings, the DRE shall not express any opinion concerning the merit of the respective arguments of the parties.

(d) After the hearings are concluded, the DRE shall formulate his Recommendations and shall submit them in writing, together with an explanation of his reasoning, to both parties. The Recommendations shall be based on the pertinent Contract provisions, applicable laws
and regulations, and the facts and circumstances involved in the dispute.

11. In all procedural matters, including the furnishing of written documents and arguments relating to disputes, Site visits, and conduct of hearings, the DRE shall have full and final authority.

12. After having been selected, the DRE shall sign two copies of the following declaration and make one copy available each to the Employer and to the Contractor:

Annexure A – Letter of appointment of Dispute Review Expert
Annexure B – DRE’s Declaration of Acceptance
Annexure C – Recommendation of Dispute Review Expert
Annexure A

Letter of Appointment of Dispute Review Expert in civil works contracts

Sub: _______________________________________________________________
(Name of the Contract)

To

Name and address of the Dispute Review Expert

We hereby confirm your appointment as Dispute Review Expert for the above contract to carry out the assignment specified in this Letter of Appointment.

For administrative purposes ______________________ (Designated officer representing the employer) has been assigned to administer the assignment and to provide the Dispute Review Expert with all relevant information needed to carry out the assignment on behalf of both the employer and the contractor. The services will be required during the period of contract for the work of (Name of the Contract) ________________.

The Dispute Review Expert shall visit the worksite once in 3 (three) months till the completion of the work indicated above or as specifically requested by Employer/Contractor for the period up to the end of defects liability period with prior intimation to the employer and the contractor. The duration of each visit shall ordinarily be for one day only. These durations are approximate and (Name of the employer and Name of the Contractor) may find it necessary to postpone or cancel the assignment and/or shorten or extend the duration.

The appointment will become effective upon confirmation of this letter by you. The appointment of Dispute Review Expert shall be liable for termination under a 30 (thirty) days written notice from the date of issue of the notice, if both Employer and the Contractor so desire. Also the appointment shall automatically stand terminated 14 days after the defect notice / correction period as stated in Clauses 35 and 36 of the Conditions of Contract is over.

The Dispute Review Expert will be paid a fee of Rs. ________ (Rupees ___________ only) per each day of visit at the worksite. The actual expenses for boarding and travelling in connection with the assignment will be reimbursed to the Dispute Review Expert. The Dispute Review Expert will submit a pre-receipted bill in triplicate to the employer indicating the date of the visit, fees for the visit and a proof in support of the actual expenditure incurred by him against boarding, lodging and travelling expenses after performing the visit on each occasion. The Contractor will make the admissible payment (both the Employer’s and the Contractor’s share) to the Dispute Review Expert within 30 days of the receipt of the bill. The Employer’s share on this account (half the paid amount) will be paid to the Contractor as guidelines laid down in 7(d).

In accepting this assignment, the Dispute Review Expert should understand and agree that he is responsible for any liabilities and costs arising out of risks associated with travel to and from the place of assignment. This includes (but is not limited to) risks such as accident (death and injury), illness, emergency repatriation, loss or damage to personal / professional effects and property. The Dispute Review Expert is advised to effect personal insurance cover in respect of such risks if he does not already have such cover in place. In this regard, the Dispute Review Expert shall maintain appropriate medical, travel, accident and third-party liability insurance. The obligation under this paragraph will survive till termination of this appointment.
Procedures for resolution of disputes by the Dispute Review Expert is described in the contract of ________________________________ (name of the contract) between the employer and the contractor vide clauses no. 6.1 of the Conditions of Contract and Contract Data. Your recommendation should be given in the format attached.

The Dispute Review Expert will carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and will conduct himself in a manner consistent herewith. After visiting the worksite, the Dispute Review Expert will discuss the matter with the Employer before arriving at any decision.

The Dispute Review Expert will agree that all knowledge and information not within the public domain, which may be acquired while carrying out this service shall be for all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any party whatsoever, except with the permission of the employer and the contractor. The Dispute Review Expert’s decision should be communicated in the form of a speaking order specifying the reasons.

The Dispute Review Expert will agree that any construction firm, with which he might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part.

Read and Agreed

Name of Dispute Review Expert

Signature

Place:

Date:

Name of Employer

Signature of authorized representative of Employer

Name of Contractor

Signature of authorized representative of Contractor

Attachment: Copy of contract document between the employer and contractor and format for recommendation.
SUMMARY OF DISPUTE REVIEW EXPERT'S RESPONSIBILITIES

The Dispute Review Expert has the following principal responsibilities:

1. Visit the site periodically.

2. Keep abreast of job activities and developments.

3. Encourage the resolution of disputes by the parties.

4. When a dispute is referred to it, conduct a hearing (no legal presentation), complete its deliberations, and prepare a Decision in a professional and timely manner (as per sample format).
Annexure – B

DISPUTES REVIEW EXPERT'S DECLARATION OF ACCEPTANCE

WHEREAS

(a) a Construction Contract (the Contract) for the [name of Project] project has been signed on [fill in date] between [name of Employer] (the Employer) and [name of Contractor] (the Contractor);

(b) Clause 6 of the Conditions of Contract provides for the selection of a Disputes Review Expert (DRE);

(c) the undersigned has been selected to serve as the DRE;

NOW THEREFORE, the undersigned DRE hereby declares as follows:

1. I accept the selection as a DRE and agree to serve in this capacity and to be bound by the provisions of Clause 6 of the Conditions of Contract and the Disputes Review Expert’s Rules and Procedures.

2. With respect to paragraph 1 of said Disputes Review Expert's Rules and Procedures, I declare

   (a) that I have no financial interest of the kind referred to in subparagraph (a);

   (b) that I have had no previous employment nor financial ties of the kind referred to in subparagraph (b); and

   (c) that I have made to both parties any disclosures that may be required by sub-paragraphs (b) and (c).

DISPUTES REVIEW EXPERT

____________________________________________

________________________________
[print name of DRE]

Date: ______________________________
Annexure C

[Project Name]

DECISION of Dispute Review Expert

Dispute No. XX [NAME OF DISPUTE]

Hearing Date: ___________________

DISPUTE

Description of dispute. A one or two sentence summation of the dispute.

CONTRACTOR’S POSITION

A short summation of the contractor’s position as understood by the Dispute Review Expert.

EMPLOYER’S POSITION

A short summation of the Employer’s position as understood by the Dispute Review Expert.

EXPLANATION

(This section could also be called Considerations, Rationale, Findings, Discussion, and so on.)

The Dispute Review Expert’s description of how each recommendation was reached.

DECISION

The Dispute Review Expert’s specific recommendation for settlement of the dispute. (The recommended course is consistent with the explanation).

Respectfully submitted,

Date: ____________________  ____________________
APPENDIX E – TERMS OF REFERENCE FOR VIDEOGRAPHIC SURVEY

The contractor shall also be required to take a video record of all roads under this contract within the first 15 days from start date. The video shall be taken during daylight hours with the Digital Video Camera mounted in the front position with the camera aligned with the centre of the road. Video records shall also be taken of all Bridge, Culvert and other structures. The Videographic recording shall be done at the running vehicular speed of 5 Kph and the vehicle running in the pro direction of Sun rays. The Employer may require that specific camera shots or angles be taken during the recording of such important features like junctions, culvert structures, damaged signage, road furniture and other road assets etc. The video shall be taken in the presence of the Employer or his nominated representative. The Contractor shall supply the Employer with set of two copies of CD/DVD of each video recording within 21 days after the notice to commence.
Appendix F.1

Contractor’s Checklist on Environmental Issues

Project Name:_________________________ Contract /Road No._________________

Contractor Details:_________________________________________________________

Project Description:________________________________________________________________

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response (see note at the end of the checklist)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities</strong></td>
<td></td>
</tr>
<tr>
<td>1. List the activities you will be undertaking during the works such as rock breaking, blasting, laying bitumen, establishing camp and plants etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Responsibilities</strong></td>
<td></td>
</tr>
<tr>
<td>2. Do you have any qualified/experienced person on environmental management? If not, how are you going to manage the environment aspects?</td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td></td>
</tr>
<tr>
<td>3. What base materials will you transport to the site such as stone, soil, diesel, lubricant?</td>
<td></td>
</tr>
<tr>
<td>4. Where will you source these materials from (non-manufactured material such as sand, soil, stone)?</td>
<td></td>
</tr>
<tr>
<td>5. Where will you store these materials?</td>
<td></td>
</tr>
<tr>
<td>6. How will you ensure materials brought to site will be stored and handled with care to avoid contamination of soil and water, reduce dust, and minimize disruption of traffic, not impairing public safety?</td>
<td></td>
</tr>
<tr>
<td><strong>Emissions to water, soil and air (Pollutants)</strong></td>
<td></td>
</tr>
<tr>
<td>7. How will you ensure that any construction materials and works will:</td>
<td></td>
</tr>
<tr>
<td>- Not restrict access to properties and carriageways.</td>
<td></td>
</tr>
<tr>
<td>- Not damage existing trees.</td>
<td></td>
</tr>
<tr>
<td>- Be protected from rain to reduce the loss of soil and materials washing down roads and entering drains and waterways.</td>
<td></td>
</tr>
<tr>
<td>- Be stored to reduce leaks (such as Diesel) into the soil or waterways.</td>
<td></td>
</tr>
<tr>
<td>- Not generate dust or cause nuisance air emissions.</td>
<td></td>
</tr>
<tr>
<td>8. How will you ensure proper drainage from the works so that water does not pond and become a hazard to health?</td>
<td></td>
</tr>
<tr>
<td>9. How will you reduce sediment from the construction activities?</td>
<td></td>
</tr>
<tr>
<td><strong>Fauna and Flora</strong></td>
<td></td>
</tr>
<tr>
<td>10. How many trees will you have to remove to undertake the works?</td>
<td></td>
</tr>
<tr>
<td>11. What will you do with any trees that are removed?</td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td>Response (see note at the end of the checklist)</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>12. How will you protect existing trees from construction activities?</td>
<td></td>
</tr>
<tr>
<td>Waste Management</td>
<td></td>
</tr>
<tr>
<td>13. How do you plan to store and dispose of:</td>
<td></td>
</tr>
<tr>
<td>● Construction debris?</td>
<td></td>
</tr>
<tr>
<td>● Workers refuse and effluent?</td>
<td></td>
</tr>
<tr>
<td>● General litter?</td>
<td></td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td></td>
</tr>
<tr>
<td>14. Will you be using any noisy equipment that may cause nuisance?</td>
<td></td>
</tr>
<tr>
<td>15. Are your works close to a school, or hospital or other place where people may be affected by noise?</td>
<td></td>
</tr>
<tr>
<td>16. What will you do to reduce noise and vibration impacts?</td>
<td></td>
</tr>
<tr>
<td>17. What will be your working hours?</td>
<td></td>
</tr>
<tr>
<td>Construction Camp / Workers’ Camp</td>
<td></td>
</tr>
<tr>
<td>18. Where you are planning to set up construction and workers camp?</td>
<td></td>
</tr>
<tr>
<td>19. Does it meet the stipulated siting criteria?</td>
<td></td>
</tr>
<tr>
<td>20. How you are going to control pollution from contraction plan and equipment?</td>
<td></td>
</tr>
<tr>
<td>21. What facilities you will provide at camp for workers?</td>
<td></td>
</tr>
<tr>
<td>Community, Awareness, Consultation, Co-ordination</td>
<td></td>
</tr>
<tr>
<td>22. How will you keep owners and occupants of shops and residences and other people of the adjoining villages and road users, who are affected, informed about the works?</td>
<td></td>
</tr>
<tr>
<td>23. How will you ensure all the sub-contractors, supervisor and others on the site, are aware of these environmental aspects?</td>
<td></td>
</tr>
<tr>
<td>24. How will you co-ordinate with utility works (such as electricity, telephone, cable)?</td>
<td></td>
</tr>
<tr>
<td>25. Can you satisfy the special regulations or environmental conditions identified in the contract for this project?</td>
<td></td>
</tr>
<tr>
<td>26. Have you attended any training course on environment, health and safety for similar construction project?</td>
<td></td>
</tr>
<tr>
<td>27. What steps will be taken to ensure that all the sub-contractors, supervisors, workers and others on the site, are aware of the causes for spread of HIV / AIDS and how to prevent its occurrence?</td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td></td>
</tr>
<tr>
<td>28. What activities could cause harm to people or property?</td>
<td></td>
</tr>
<tr>
<td>29. How will you reduce the risk of impact on people or their property?</td>
<td></td>
</tr>
<tr>
<td>30. How will you reduce potential injury to your workers and subcontractors?</td>
<td></td>
</tr>
</tbody>
</table>

Prepared by: _____________________________ Date __________________
Approved by: _____________________________ Date __________________
Agreed Comments: ___

Note:

- The Contractor shall fill this Checklist road-wise based on ESMF and Contract stipulation.
- This checklist shall serve as Contractor’s road specific environmental management plan and serves as basis for subsequent implementation of the safeguard measures by the Contractor and monitoring the same by the Employer.
- This checklist should be filled up during initial road inventory by the Contractor i.e. before any physical works start.
Appendix-F.2

Environmental Management Action Plan (EMAP)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Environmental Issue</th>
<th>Location/ sources</th>
<th>Mitigation Measures</th>
<th>Implementing Agency</th>
<th>Supervising &amp; Monitoring Agency</th>
</tr>
</thead>
</table>
| P.1     | Ecologically sensitive areas (protected forests, reserve forests, wildlife sanctuary, national park, tiger reserve etc.) | Road sections pass through ecologically sensitive areas | • Obtain prior permission for working at sections of the road pass through ecologically sensitive areas from the competent authorities as mentioned in Appendix 5 of EMF.  
• No tree felling should be allowed  
• No breaking of fresh forest land should be carried out.  
• While black-toping, adequate precaution should be taken to avoid any damage to flora and fauna.  
• Plantation activities will be taken up along the road at cost of PMU, if the concerned Divisional Forest Officer find it necessary. | RCD | Concerned competent authority |
### Construction Phase

<table>
<thead>
<tr>
<th>C.1</th>
<th>Air Pollution</th>
<th>Contractor</th>
<th>RCD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction plants, equipment and vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- All vehicles used by the Contractor must have copies of currently valid Pollution under Control Certificates displayed as per the requirement of the Motor Vehicles Department for the duration of the Contract.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- <strong>For Construction plant following will be maintained:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1.5 km away from settlement, school, hospital on downwind directions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1.5 km from any archaeological site</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1.5 km from ecologically sensitive areas i.e. forest, national park, sanctuary</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1.5 km from rivers, streams and lakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 500 m from ponds</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 500 m from National Highway, 250 m from State Highway, 100 m from District roads and other roads</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- away from agricultural land</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- preference to barren land</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Obtaining Consent-for-Establishment (CFE) and Obtaining Consent-for-Operation (CFO) under Air and Water Acts from the Bihar State Pollution Control (BSPCB).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Ensure adequate stack height for HMP as stipulated in CFE.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Install emission control devices such as bag house filters, cyclone separators, water scrubbers etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bag house filter / multi-cone cyclone for emission control. For bag house, cartridge filters reported to be more efficient than fabric filters</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Greenbelt along the periphery of plant site.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### C.2 Water Pollution

<table>
<thead>
<tr>
<th>Dust during earth works or from spoil dumps</th>
<th>Maintaining adequate moisture at surface of any earthwork layer completed or non-completed to avoid dust emission. Stockpiling spoil at designated areas and at least 5 m away from traffic lane.</th>
<th>Contractor</th>
<th>RCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage of maintenance materials</td>
<td>Proper stockpiling and sprinkling of water as necessary.</td>
<td>Contractor</td>
<td>RCD</td>
</tr>
</tbody>
</table>
| Clearing of waterways of cross drainage works including bridges and clearing of longitudinal side drains | • Clearance of waterway will be undertaken before onset of monsoon i.e. early in the month of June.  
• Debris generated due to clearing of longitudinal side drains and waterways of cross drainage will be stored above high flood level and away from waterway, and reused on embankment slope or disposed at designated areas¹. | Contractor | RCD |
| Construction vehicles | • Avoiding cleaning / washing of construction vehicle in any water body | Contractor | RCD |

---

¹ Designated areas are to be identified and finalized by Contractor in consultation with Employer in accordance with relevant EMF Guidelines.
<table>
<thead>
<tr>
<th>Construction camp and workers’ camp</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Minimum distance of 1.5 km from river, stream and lake and 500 m from ponds</td>
</tr>
<tr>
<td>• Locate facilities in areas not affected by flooding and clear of any natural or storm water courses.</td>
</tr>
<tr>
<td>• The ground should have gentle slope to allow free drainage of the site.</td>
</tr>
<tr>
<td>• The Contractor will prepare, make widely available (especially to staff responsible for water and material management), and implement a Storm water Management Plan (SWMP) for (all) the site(s) after approval from Employer.</td>
</tr>
<tr>
<td>• The camp must have impervious flooring to prevent seepage of any leaked oil &amp; grease into the ground. The area should be covered with a roof to prevent the entry of rainwater.</td>
</tr>
<tr>
<td>• Degreasing can also be carried out using mechanical spray type degreaser, with complete recycle using an enclosure with nozzles and two sieves, coarse above and fine below, may be used.</td>
</tr>
<tr>
<td>• All the waste oil collected, from skimming of the oil trap as well as from the drip pans, or the mechanical degreaser shall be stored in accordance with the Environment Protection (Storage and Disposal of Hazardous Wastes) Rules, 1989. For this purpose, metallic drums should be used.</td>
</tr>
<tr>
<td>• A separate vehicle washing ramp shall be constructed adjacent to the workshop for washing vehicles, including truck mounted concrete mixers, if any, after each day’s construction is over, or as required.</td>
</tr>
</tbody>
</table>

<p>| Contractor | RCD |</p>
<table>
<thead>
<tr>
<th>C.3</th>
<th>Noise Pollution and Vibration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles and Construction machinery</td>
<td></td>
</tr>
</tbody>
</table>

Site Controls: All vehicles and equipment will be fitted with silencers and/or mufflers which will be serviced regularly to maintain them in good working condition and conforming to the standard of 75dB (A) at 1m from surface of enclosure.

Scheduling of Project Activities: Operations will be scheduled to coincide with period when people would least likely to be affected. Construction activities generating noise level more than 75 dB (A) will be avoided between 10 P.M. and 6 A.M. near residential areas.

Protection devices (ear plugs or ear muffs) will be provided to the workers operating in the vicinity of high noise generating machines.

Construction equipment and machinery will be fitted with silencers and maintained properly.

- Source-control through proper maintenance of all equipment.
- Use of properly designed engine enclosures and intake silencers.

Vehicles and equipment used will confirm to the prescribed noise pollution norms.

Movements of heavy construction vehicles and equipment near public properties will be restricted.

- Comply with sitting criteria construction plants and installations and maintenance of pollution control devices as mentioned in Appendix 9 of EMF.
- Refer Appendix 10 of EMF for identification, and operation of quarry areas and adopting controlled blasting.
- Refer Appendix 16 of EMF for available licensed quarry along the project road.
| C.4 | Land Pollution | Spillage from plant and equipment at construction camp | Providing impervious platform and oil and grease trap for collection of spillage from construction equipment vehicle maintenance platform  
Collection oil and lubes drips in container during repairing construction equipment vehicles  
Providing impervious platform and collection tank for spillage of liquid fuel and lubes at storage area  
Providing bulk bituminous storage tank instead of drums for storage of bitumen and bitumen emulsion  
Providing impervious base at bitumen and emulsion storage area and regular clearing of any bitumen spillage for controlled disposal  
Reusing bitumen spillage  
Disposing non-usable bitumen spills in a deep trench providing clay lining of 300 mm at the bottom and filled with soil at the top (for at least 0.5 m) to encourage vegetation growth.  
Refer Appendix 8 and Appendix 9 of EMF. | Contractor | RCD  
Domestic solid waste and liquid waste generated at camp | Collecting kitchen waste at separate bins and disposing of in a pit at designated area/s  
Collecting plastics in separate bins and disposing in deep trench at designated area/s covering with soil  
Collecting cottons, clothes etc. at separate bins and burning in a pit (with sand bed) | Contractor | RCD00  
Bidder | Executive Engineer, Road Division | Appendices | Page: 341
### Appendix F3

#### Environmentally Sensitive Areas for Particular Attention

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Name of the Road</th>
<th>Circle</th>
<th>Type of Forest and Name of the Forest/Wild life Sanctuary</th>
<th>Section of the road passing through R.F/ P.F / Wild life Sanctuary</th>
<th>Section of the road passing adjacent to R.F/ P.F/ Wild life Sanctuary (but not passing through)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Nil-</td>
</tr>
<tr>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>Nil</td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td></td>
<td></td>
<td>-Nil-</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-Nil-</td>
</tr>
</tbody>
</table>

**Notes:**

1. Works shall not proceed in these areas without clearance from the Employer.
2. N.A. – Not Applicable - No Approval required proceeding with works.