

**GOVERNMENT OF KERALA
PUBLIC WORKS DEPARTMENT**

**KERALA STATE TRANSPORT PROJECT
(Under World Bank Loan Assistance)
Loan No.6463-IN &6464-IN**

**OUTPUT AND PERFORMANCE BASED ROAD CONTRACT
(OPBRC)**

BIDDING DOCUMENTS

CONTRACT NO. KSTP/OPBRC –01

**Name of work: Output and Performance based Road Contract
for the Maintenance of Roads under Package -
01 in Ernakulam, Kottayam , Alappuzha &
Pathanamthitta Districts of KERALA**

Period of sale of bidding document:	From: 27.07.2020 To : 26.08.2020
Pre-bid meeting:	Date: 10.08.2020 Time: 11.00 A.M
Last date and time for receipt of bids:	Date: 27.08.2020 Time: 16.00 hrs.
Time and date of opening of technical bids:	Date: 27.08.2020 Time: 16.30 Hrs

Place of opening of
bids:

**Office of the Project Director, KSTP,
T.C. 11/339, SreeBala Building, Keston Road,
Nanthancode, Kowdiar P.O.,
Thiruvananthapuram – 695003
Ph. 0471-2318985/8946
Email: pdkstp@gmail.com**

Officer Inviting Bids

**Project Director, KSTP,
T.C. 11/339, SreeBala Building, Keston Road,
Nanthancode, Kowdiar P.O.,
Thiruvananthapuram – 695003
Ph. 0471-2318985/8946
Email: pdkstp@gmail.com**

INVITATION FOR BID (IFB)

**GOVERNMENT OF KERALA
PUBLIC WORKS DEPARTMENT
KERALA STATE TRANSPORT PROJECT**

**INVITATION FOR BID (IFB)
FOR**

**Name of work: Output and Performance based Road Contract for the Maintenance of
Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & Pathanamthitta
Districts of KERALA**

BID NOTICE No. KSTP/OPBRC – 01 Date: 18-07-2020

NATIONAL COMPETITIVE BIDDING

1. The Government of Kerala intends use of the funds from development policy loan from IBRD to cover eligible payments under the contracts for construction of works as detailed below. Bidding is open to all bidders from eligible source countries as defined in the “*Guidelines: Procurement under IBRD Loans and Credits*”. Bidders should be Special Class or equivalent Contractors, registered with the Government of KERALA, or other State Government/ Government of India, or State/Central Government undertakings. **Bidders are advised to note the minimum qualification criteria specified in Clause 4 of the Instructions to Bidders and Section III Evaluation and Qualification Criteria to qualify for the award of the contract.**
2. **The Project Director, KSTP** on behalf of Governor of KERALA, invites bids for the construction of 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 **107.753 kilometres** in Ernakulam, Kottayam , Alappuzha & Pathanamthitta Districts. 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 7 years.

3. Bid documents may be purchased from the office of the Project Director, KSTP, **T.C. 11/339, SreeBala Building, Keston Road, Nanthancode, Kowdiar P.O., Thiruvananthapuram – 695003 website: <https://www.kstp.org.in> email: pdkstp@gmail.com, cepmtkstp@gmail.com , from 27-07-2020 to 26-08-2020 during office hours i.e., from 10:30 AM to 05:00 PM. (IST), for a non-refundable fee of **Rs.16800/- (inclusive of GST)**. The mode of payment shall be in the form of DD drawn in favour of **Project Director, Thiruvanthapuram ,Kerala** on any scheduled Bank payable at Thiruvananthapuram. Alternatively, bidding document can be downloaded from the website and the bid fee submitted along with bid in the manner as mentioned above. Interested bidders may obtain further information at the same address. The Project Director, KSTP will not be held responsible for the postal delay if any, in the delivery of the documents or non-receipt of the same.**

Bidders are strongly encouraged to purchase the bidding documents prior to the pre-bid meeting (refer Item 9 below) 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.

4. Bids shall be valid for 150 days after the dead line date specified for submission.
5. Bids must be accompanied by bid security of the amount specified for the work in the table below in the form of Demand Draft or Bank Guarantee. If Demand Draft form is adopted, it should be payable at Thiruvananthapuram and drawn in favour of the **Project Director, KSTP, Thiruvananthapuram**. If Bank Guarantee form is adopted it should be drawn in the favour of Project Director, KSTP. Bid security will have to be in any one of the forms as specified in the Bidding document and shall have to be valid for **45** days beyond the validity of the Bid.
6. Details of the roads, road lengths are shown in the table ‘Bidding Details’ below:

Bidding Details
Output & Performance Based Maintenance Contract (OPBRC)

Package Number	Name of Road	Length in km	District	ECV in Rs.	Bid Security Rs	Period
Package – 01	Chengannur – Angamali road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam	69.42 crore	69.42 lakh	7 years
	Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Bethel Junction]	9.514	Alappuzha			
	Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannor KSRTC Bus stand to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta			
	Total length	107.753 km				

7. Joint ventures will be permitted.
8. Bids must be delivered to the Office of the Project Director, KSTP on or before 16:00 hours (IST) **on 27-08-2020** and will be opened on the same day by the Project Director, KSTP at **16:30 hours (IST)** in the presence of Bidders or their representatives who choose to attend. If the office happens to be closed on the date of receipt of the bids as specified, the bids will be received and opened on the next working day at the same time and venue.
9. **Bidders are invited to attend a pre-bid meeting and workshop on 10-08-2020 at 11:00 am**, at the office of the **Project Director, KSTP** to clarify issues and to answer the questions on any matter that may be raised at that stage as stated in Clause 7.4 of ‘Instructions to Bidders’ of the bidding document.
Other details can be seen in the bidding documents.

Signed

The **Project Director, KSTP**

(For and on behalf of the Governor of KERALA)

Bidding Document

Output & Performance Based Road Contract (OPBRC)

Table of Contents

PART 1 – Bidding Procedures

Section I. Instructions to Bidders.....	
Section II. Bid Data Sheet.....	
Section III. Evaluation and Qualification Criteria	
Section IV. Bidding Forms	
Section V. Eligible Countries	

PART 2 – Technical Specifications

Section VI. Technical Specifications	
--	--

PART 3 – Conditions of Contract and Contract Forms

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

APPENDICES

(A) Drawings	
(B) Asset Inventory Information	
(C) Forms of Contract.....	
(D) Rules and Procedures for Function of the Dispute Review Expert	
(E) Terms of Reference for Videographic Survey	
(F) 1. Contractors Checklist on Environmental and Social Issues	
2. Environmental Management Action Plan (EMAP).....	
3. Environmental Sensitive Areas for Particular Attention	

PART 1 – BIDDING PROCEDURES

Section I. Instructions to Bidders

Table of Clauses

A. General

1. Scope of Bid.....
2. Source of Funds
3. Corrupt Practices.....
4. Eligible Bidders
5. Eligible Materials, Equipment and Services

B. Contents of Bidding Document

6. Sections of Bidding Document
7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting.....
8. Amendment of Bidding Document.....

C. Preparation of Bids

9. Cost of Bidding
10. Language of Bid.....
11. Documents Comprising the Bid.....
12. Letter of Bid, and Schedules
13. Alternative Bids
14. Bid Prices and Discounts
15. Currencies of Bid and Payment
16. Documents Comprising the Technical Proposal.....
17. Documents Establishing the Qualifications of the Bidder
18. Period of Validity of Bids
19. Bid Security
20. Format and Signing of Bid.....

D. Submission and Opening of Bids

21. Sealing and Marking of Bids
22. Deadline for Submission of Bids
23. Late Bids
24. Withdrawal, Substitution, and Modification of Bids
25. Bid Opening

E. Evaluation and Comparison of Bids

26. Confidentiality
27. Clarification of Bids.....
28. Deviations, Reservations, and Omissions.....
29. Determination of Responsiveness.....
30. Nonmaterial Nonconformities
31. Correction of Arithmetical Errors
32. Conversion to Single Currency
33. Margin of Preference
34. Evaluation of Bids.....
35. Comparison of Bids
36. Qualification of the Bidder
37. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

F. Award of Contract

- 38. Award Criteria
- 39. Notification of Award
- 40. Signing of Contract
- 41. Performance Security

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 an *Output and Performance-based Road Contract (OPBRC)*. The Works and Services under the OPBRC 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 Section VI 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 add new characteristics 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 Borrower or Recipient (hereinafter called “Borrower”) **indicated in the BDS** has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) toward the cost of the project **named in the BDS**. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which these Bidding Documents are issued.

2.2 Payments by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the financing agreement between the Borrower and the Bank (hereinafter called the Loan Agreement), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the Borrower shall derive any rights from the Loan Agreement or have any claim to the funds. The Loan Agreement prohibits a withdrawal from the loan account for the purpose of any payment to persons or entities, or for any import of equipment, plant, or materials, if such payment or import is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

Corrupt Practices

3.1 It is the Bank’s policy to require that Borrowers (including beneficiaries of bank loans), as well as Bidders, Suppliers, and Contractors, and their subcontractors under Bank-financed contracts, 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. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below 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. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions;

(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
 - (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 Bank 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 sub-clause 3.1 (e) below.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract in question;
- (c) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive or coercive practices during the selection process or the execution of the contract, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur;
- (d) will sanction a firm or individual, including declaring the them ineligible, either indefinitely or for a stated period of

time, to be awarded a Government-financed contract if at any time determines that they have, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and

- (e) will have the right to require that a provision be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers, and contractors and their sub-contractors to permit the Bank to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Bank.

Eligible Bidders

- 4.1 A Bidder may be a natural person, private entity, government-owned entity — subject to ITB 4.6 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 A Bidder and all parties constituting the Bidder, may have the nationality of any country as defined under the *Guidelines: Procurement under IBRD Loans and IDA Credits* (hereinafter referred to as the Guidelines), subject to the restrictions specified in Section V Eligible Countries. A Bidder shall be deemed to have nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related Services
- 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) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the party is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or
- (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 A firm that has been determined to be ineligible by the Bank in relation to the Bank Guidelines On Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants shall be not be eligible to be awarded a contract.

4.5 Government-owned entities in the Employer's country shall be eligible only if they can establish that they are legally and financially autonomous and operate under commercial law. Also, they shall not be dependent agencies of the Employer.

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

4.7 Firms shall be excluded if:

as a matter of law or official regulation, the Borrower's country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required; or

by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods or contracting of works or services from that country or any payments to persons or entities in that Country.

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

Eligible Materials,

5.1 The materials, equipment and services to be supplied under the

Equipment, and Services

Contract and financed by the Bank may have their origin in any country subject to the restrictions specified in Section V, eligible Countries, and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

- 5.2 For purposes of ITB 5.1 above, "origin" means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that is substantially in its basic characteristics or in purpose or utility from its components.

B. Contents of Bidding Document

Sections of Bidding Document

- 6.1 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 8.

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
- Section V. Eligible Countries

PART 2 Specifications for Works and Services

- Section VI. Specifications for Works and Services

PART 3 Conditions of Contract and Contract Forms

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

- 6.2 The Invitation for Bids issued by the Employer is not part of the Bidding Document.
- 6.3 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.
- 6.4 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**

- 7.1 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 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than fourteen (14) days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should 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 8 and ITB 22.2.
- 7.2 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.
- 7.3 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 the inspection.
- 7.4 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.
- 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting.
- 7.6 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 to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3. 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 8 and not through the minutes of the pre-bid

meeting.

7.7 Non attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

Amendment of Bidding Document

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

8.2 Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.

8.3 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 22.2

C. Preparation of Bids

Cost of Bidding

9.1 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

10.1 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 another language provided they are accompanied by an accurate translation of the relevant passages in the language **specified in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.

Documents Comprising the Bid

- 11.1 The Bid shall comprise the following:
- (a) Letter of Bid;
 - (b) completed schedules as required, including priced Bills of Quantities, in accordance with ITB 12 and 14;
 - (c) Bid Security, in accordance with ITB 19;
 - (d) alternative bids, if permissible, in accordance with ITB 13;
 - (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
 - (f) documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
 - (g) Technical Proposal in accordance with ITB 16; and
 - (h) any other document **required in the BDS**.

- 11.2 In addition to the requirements under ITB 11.1, 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**
- 12.1 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**
- 13.1 **Unless otherwise indicated in the BDS**, alternative bids shall not be considered.
- 13.2 When alternative times for reaching the required Service Levels or for the completion of Initial Rectification or Periodic Maintenance or Minor Improvement Works are explicitly invited, a statement to that effect **will be included in the BDS**, as will the method of evaluating different times for completion.
- 13.3 Except as provided under ITB 13.4 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.
- 13.4 **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 VI, Work's Requirements.
- Bid Prices and Discounts**
- 14.1 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.
- 14.2 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.

- 14.3 The price to be quoted in the Letter of Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any unconditional discounts and the methodology for their application in the Letter of Bid, in accordance with ITB 12.1.
- 14.5 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. In such a case, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Employer may require the Bidder to justify its proposed indices and weightings.
- 14.6 If so indicated in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the bids for all lots (contracts) are submitted and opened at the same time.
- 14.7 All duties, taxes including GST, 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.

Currencies of Bid and Payment

- 15.1 The currency(ies) of the bid shall be as **specified in the BDS**.
- 15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Summary of Payment Currency Schedule, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

Documents Comprising the Technical Proposal

- 16.1 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 VI, Specifications.

Documents Establishing the Qualifications of the Bidder

- 17.1 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.

17.2 Domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 33.

Period of Validity of Bids

18.1 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.

18.2 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 19, it shall also be extended for twenty-eight (28) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid, except as provided in ITB 18.3.

18.3 In the case of fixed price contracts, if the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be adjusted by a factor specified in the request for extension. Bid evaluation shall be based on the Contract Price without taking into consideration the above correction.

Bid Security

19.1 **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 and currency **specified in the BDS**.

19.2 The bid security shall be a demand guarantee at the Bidder's option, in any of the following forms:

an unconditional bank guarantee;

an irrevocable letter of credit;

a cashier's or certified check; or

another security **indicated in the BDS**,

from a reputable source from an eligible country. If the bid security furnished by the Bidder is in the form of a bond issued by an insurance or bonding institution located outside the Employer's Country, it shall have a correspondent financial institution located in the Employer's Country to make it enforceable. The bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, in the case of a bank guarantee, or in another substantially similar format approved by the Employer prior to bid

submission. In either case, the form must include the complete name of the Bidder. The bid security shall be valid for twenty-eight (28) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.3 Any bid not accompanied by an enforceable and compliant bid security, if one is required in accordance with ITB 19.1, shall be rejected by the Employer as non responsive.

19.4 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 41.

19.5 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.

19.6 The bid security may 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 18.2 or

if the successful Bidder fails to:

- (i) sign the Contract in accordance with ITB 40; or
- (ii) furnish a performance security in accordance with ITB 41.

19.7 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.

19.8 If a bid security is **not required in the BDS**, and

- (a) 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 18.2, or
- (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 40; or
 - (ii) furnish a performance security in accordance with ITB 41;

the Borrower may, **if provided for in the BDS**, declare the Bidder disqualified to be awarded a contract by the Employer for a period of time **as stated in the BDS**.

Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it "ORIGINAL." Alternative bids, if permitted in accordance

with ITB 13, shall be clearly marked “ALTERNATIVE.” In addition, the Bidder shall submit copies of the bid, in the number **specified in the BDS** and clearly mark them “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.

- 20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialed by the person signing the bid.
- 20.3 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

Sealing and Marking of Bids

- 21.1 The Bidder shall enclose the original and all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL,” “ALTERNATIVE,” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope.
- 21.2 The inner and outer envelopes shall:
- (a) bear the name and address of the Bidder;
 - (b) be addressed to the Employer in accordance with ITB 22.1;
 - (c) bear the specific identification of this bidding process **indicated in Clause 1.1 of the BDS**; and
 - (d) bear a warning not to open before the time and date for bid opening.
- 21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.
- 21.4 The Bid should contain two parts viz: Technical and Financial. Technical part should contain the following documents sealed in a separate cover and marked as ‘**Technical Proposal**’.
- a) Letter of Bid-Technical Part
 - b) Bid fee for the amount in the form as indicated in the ITB, if not submitted earlier
 - c) Bid Security in accordance with ITB 19

- d) Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- e) Documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
- f) Technical Proposal in accordance with ITB 16; and
- g) Any other document **required in the BDS**.

The Financial Part should contain the following documents and may be sealed in a separate cover and marked as '**Financial Proposal**'.

- a) The Letter of Bid-Financial part
- b) Completed schedules (Bid Summary Schedule and Schedules 1 to 5) as required, including priced Bills of Quantities, in accordance with ITB 12 and 14

The Technical Proposal and Financial Proposal separately sealed shall be placed in an outer envelope and sealed and marked as mentioned in 21.2.

**Deadline for
Submission of
Bids**

22.1 Bids must be received by the Employer at the address and no later than the date and time **indicated in the BDS**. **When so specified in the BDS**, bidders shall have the option of submitting their bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures **specified in the BDS**.

22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, 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.

Late Bids

23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

**Withdrawal,
Substitution, and
Modification of
Bids**

24.1 A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:

- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawals notices do not require copies),

and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” “MODIFICATION;” and

(b) received by the Employer prior to the deadline prescribed for submission of bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid Form or any extension thereof.

Bid Opening

25.1 The Employer shall open the bids in the presence of Bidders` designated representatives who choose to attend, and at the address, date and time **specified in the BDS**. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 22.1, shall be **as specified in the BDS**.

25.2 First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked “SUBSTITUTION” shall be opened and read out and exchanged with the corresponding bid being substituted, and the substituted bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked “MODIFICATION” shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.

25.3 The envelopes marked as ‘Technical Proposal shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the details of Bid fee, Bid Security and the broad contents of the Technical Proposal. No bid shall be rejected at bid opening except for late bids, in accordance with ITB 23.1. The Technical Proposal will be evaluated and the bidders who qualify the minimum requirements as per IFB will be shortlisted for opening of Financial Proposal.

25.4 Financial Proposal of those who qualify in the Technical evaluation only will be considered for Financial Bid opening. Date and time of opening of Financial bid will be informed to

the selected bidders. Bid Price(s) including any discounts and any other details as the Employer may consider appropriate will be read out. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. If so requested by the Employer **in the BDS**, the Letter of Bid and the Schedule of Prices are to be initialed by representatives of the Employer attending bid opening **in the manner indicated in the BDS**.

- 25.4 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot if applicable, including any discounts and alternative offers; and the presence or absence of a bid security, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

Confidentiality

- 26.1 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.
- 26.2 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.
- 26.3 Notwithstanding ITB 26.2, 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

- 27.1 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 31.
- 27.2 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**

28.1 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**

29.1 The Employer’s determination of a bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB11.

29.2 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.

29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section V, Specifications have been met without any material deviation or reservation.

29.4 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**

30.1 Provided that a bid is substantially responsive, the Employer may waive any non conformities in the bid that do not constitute a material deviation, reservation or omission.

30.2 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.

30.3 Provided that a bid is substantially responsive, the Employer shall rectify nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section III, Evaluation and Qualification Criteria.

**Correction of
Arithmetical
Errors**

31.1 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.

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

**Conversion to Single
Currency**

32.1 For evaluation and comparison purposes, the currency (ies) of the bid shall be converted into a single currency **as specified in the BDS.**

**Margin of
Preference**

33.1 **Unless otherwise specified in the BDS,** a margin of preference shall not apply.

Evaluation of Bids

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

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

- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Schedule of Prices;
- (b) price adjustment for correction of arithmetic errors in

accordance with ITB 31.1;

- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
- (e) adjustment for nonconformities in accordance with ITB 30.3;
- (f) the evaluation factors indicated in Section III, Evaluation and Qualification Criteria;

34.3 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.

34.4 If these Bidding Documents allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid Form, is specified in Section III, Evaluation and Qualification Criteria.

34.5 If the bid, which results in the lowest Evaluated Bid Price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses 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 analyses, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased 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.

34.6 The price of the Initial Rectification, Periodic Maintenance and Minor Improvement Works included in each bid shall not be higher than the threshold **indicated in the BDS**. If the Bidder estimates that its costs for the Initial Rectification, Periodic Maintenance and Minor Improvement Works are higher than the threshold **indicated in the BDS**, it shall include the portion 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 and Minor Improvement Works, the Employer may reject the bid.

Comparison of Bids

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

34.2.

- 35.2 After application of the criteria established in Sub-Clauses 34.1 to 34.6, 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
 - (d) The total price of the priced Schedule of Prices for the Minor Improvement Works, if the bidding documents require prices for this type of works, plus
 - (e) The total price of the priced Schedule of Prices for the Emergency Works.

Qualification of the Bidder

- 36.1 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.
- 36.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.
- 36.3 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.

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

- 37.1 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

- 38.1 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

- 39.1 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.
- 39.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 39.3 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 39.1, requests in writing the grounds on which its tender was not selected.

Signing of Contract

- 40.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.
- 40.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

Performance Security

- 41.1 - Within twenty-eight (28) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the conditions of contract, subject to ITB 34.5, using for that purpose the Performance Security Form included in Section IX, Annex to the Particular Conditions - Contract Forms, or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been verified by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer’s Country.
- 41.2 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.

Section-II
Bid Data Sheet

Bid Data Sheet

ITB Clause Reference	Bid Data																							
A. Introduction																								
ITB 1.1	The package number of the Invitation for Bids is : KSTP/OPBRC - 01																							
ITB 1.1	The Employer is: Government of Kerala represented by the Project Director,KSTP																							
ITB 1.1	<p>The name of the work is: Output and Performance based Road Contract for the maintenance of Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & Pathanamthitta Districts of KERALA</p> <p>The identification number of the package is: KSTP/OPBRC -01</p> <p>The number and identification of lots (contracts)comprising this NCB is: KSTP/OPBRC –01</p>																							
ITB 1.1	<p>The Roads included in the Bid are:</p> <table border="1"> <thead> <tr> <th>Package Number</th> <th>Name of Road</th> <th>Length in km</th> <th>District</th> </tr> </thead> <tbody> <tr> <td>Package – 01</td> <td> Chengannur – Angamaly road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion] </td> <td>86.569</td> <td>Kottayam and Ernakulam</td> </tr> <tr> <td></td> <td> Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannur] </td> <td>9.514</td> <td>Alappuzha</td> </tr> <tr> <td></td> <td> Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannur to Thekkemala Junction excluding Iycad bridge] </td> <td>11.670</td> <td>Alappuzha and Pathamathitta</td> </tr> <tr> <td></td> <td style="text-align: right;">Total length</td> <td>107.753 km</td> <td></td> </tr> </tbody> </table> <p>Details of Road Sections are contained in Clause A7 of the Technical Specifications</p>				Package Number	Name of Road	Length in km	District	Package – 01	Chengannur – Angamaly road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam		Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannur]	9.514	Alappuzha		Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannur to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta		Total length	107.753 km	
Package Number	Name of Road	Length in km	District																					
Package – 01	Chengannur – Angamaly road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam																					
	Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannur]	9.514	Alappuzha																					
	Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannur to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta																					
	Total length	107.753 km																						

ITB 1.1 (b)	Initial Rectification works are required. 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 Section VI -Part D of the Technical Specifications.
ITB 1.1 (c)	Periodic Maintenance works are required. 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 Section VI -Part E of the Technical Specifications.
ITB 1.1 (d)	Minor Improvement works are required as detailed in Schedule 4 and Section VI-Part F of Technical Specifications.
ITB 1.1 (e)	and as further detailed in section VI part G specifications for emergency works.
ITB 2.1	Funding: IBRD The name of the Borrower is: Government of Kerala
ITB 2.1	The name of the Project is: Kerala State Road Project
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 (vi) 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 during the currency of the contract. 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 4.8	This bid is open to all eligible Bidders
B. Bidding Documents	
ITB 6.1	<i>Add the following at the end of the list of Documents</i> • Appendices
ITB 7.1	For clarification purposes only, the Employer’s address is: Attention: Office of Project Director, KSTP Street Address: T.C. 11/339, SreeBala Building, Keston Road, Nanthacode, Kowdiar, P.O., Thiruvananthapuram

	<p>City: Thiruvananthapuram Pin Code: 695003 Country: India Telephone: +91-471-2318985/8946 Facsimile number: +91-471-2318946 Electronic mail address: pdkstp@gmail.com; cepmtkstp@gmail.com</p>
ITB 7.2	<p><i>Delete ITB Clause 7.2 and insert the following</i></p> <p>7.2 The Bidder is required to visit and examine the Site of the Roads and its surroundings and obtain all information including maintenance requirements and social 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.</p>
ITB 7.4	<p><i>Delete ITB Clause 7.4 and insert the following</i></p> <p>7.4 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.</p> <p>A Pre-Bid meeting will take place at the following date, time and place: Date: 10- 08 - 2020 Time: 11:00 am Place: Office of the Project Director, Kerala State Transport Project, TC 11/339, SREE BALA Building Keston Road, Nanthencode, Kowdiar (P.O), Thiruvananthapuram 695003, Kerala</p>
C. Preparation of Bids	
ITB 10.1	The language of the bid is: English.
ITB 11.1 (h)	<p>Amend the sub clause as follows:</p> <p>"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"</p>
ITB 13.1	Alternative bids shall not be permitted.
ITB 13.2	Alternative times for reaching the required Service Levels and for the completion of the Initial Rectification and Periodic Maintenance Works will not be permitted.
ITB 13.4	Alternative technical solutions for the Initial Rectification, Periodic Maintenance Works and Minor Improvement Works shall not be permitted.
ITB 14.5	The contract is subject to Price adjustment in accordance with Clause 48 of the General Conditions.

ITB 14.7	<p><i>Add the following note to Clause 14.7</i></p> <p>Note: “Bidders may like to ascertain availability of excise/custom duty exemption benefits available in India to the contracts financed under World Bank loan/credits. They are solely responsible for obtaining such benefits which they have considered in their bid and in case of failure to receive such benefits for reasons whatsoever, the employer will not compensate the bidder(contractor). The bidder shall furnish along with his bid a declaration to this effect in the Declaration Format provided in Section IV of the Bidding Documents.</p> <p>Where the bidder has quoted taking into account such benefits, he must give all information required for issue of certificates in terms of Government of India Central Excise Notification and Custom Notification as per form stipulated in Section IV. In case the bidder has not provided the required information or has indicated to be furnished later on in the Declaration Format, the same shall be construed that goods/construction equipment for which certificate is required is NIL.</p> <p>To the extent the employer determines the quantities indicated therein are reasonable keeping in view the Bill Of Quantities, construction programme and methodology, the certificates will be issued and no subsequent changes will be permitted. The certificate will be issued with in 60 days of signing of the contract for materials pertaining to BOQ quantities, equipment and machinery. In case of materials pertaining to Variation items and quantities the certificate shall be issued only on request from the Contractor when in need and duly certified by the Engineer and no subsequent changes will be permitted.</p> <p>If the bidder has considered the custom/excise duty exemption for materials/construction equipment to be bought for the work, the bidder shall confirm and certify that the Employer will not be required to undertake any responsibilities of the Government of India Scheme or the said exemptions being available during the contract execution, except issuing the required certificates.</p> <p>The bids which do not conform to the above provisions or any condition by the bidder, which makes the bid subject to availability of customs/excise duty exemption for materials/construction equipment or compensation on withdrawal of or any variations to the said exemptions will be treated as non-responsive and rejected.</p> <p>Any delay in procurement of the construction equipment/machinery/goods as a result of the above shall not be entertained as a reason for granting any extension of time.”</p>
ITB 15.1	The currency of the bid shall be as follows: Indian rupees
ITB 18.1	The bid validity period shall be 150 days.
ITB 18.2	“Period of 28 days mentioned in the third sentence of the ITB Clause 18.2 should be amended to be read as 45 days”
ITB 18.3	Contract price shall be adjusted by a factor : Not Applicable
ITB 19.1	<p>A bid security shall be required, the amount and currency of the bid security shall be: Rupees 69,42,000/- (Rupees Sixty nine lakh and Forty Two thousand only)</p> <p>The Bid security shall be payable at Thiruvananthapuram and drawn in favour of the Project Director, KSTP, Thiruvananthapuram if in the form of Demand Draft. If Bank Guarantee form is adopted it should be drawn in the favour of Project Director,</p>

	KSTP, Thiruvananthapuram.
ITB 19.2	Other types of acceptable securities: None “Period of 28 days mentioned in the last sentence of the ITB clause 19.2 should be amended to read as 45 days.”
ITB 19.8	This clause is Not Applicable
ITB 20.1	Bidder need to submit one set of bidding document signed and marked as ‘Original’ and one set marked as ‘Copy’.
ITB 20.2	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: legally enforceable Power of Attorney
ITB 20.4	<i>Insert new Clause</i> 20.4 The Bidder Shall furnish information as described in the “Letter of Bid” on commission or gratuities, if any, paid or to be paid to agents relating to this bid, and to contract execution if the bid is awarded the Contract
D. Submission and Opening of Bids	
ITB 22.1	For bid submission purposes only, the Employer’s address is: Attention: Project Director, KSTP Street Address: T.C. 11/339, SREE BALA Building, Keston Road, Kowdiar P.O, City: Thiruvananthapuram, Kerala Pin Code: 695 003 Country: India The deadline for bid submission is: Date: 27.08.2020 Time: 16.00 hours (IST) Bidders shall not have the option of submitting their bids electronically.
ITB 25.1	<i>Insert the following to the end of ITB Clause 25.1</i> In the event of the specified date of Bid being opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day. The technical bid opening shall take place at: Office of the Project Director, KSTP Street Address: T.C. 11/339, SREE BALA Building, Keston Road, Kowdiar P.O, City : Thiruvananthapuram,KERALA Country: India – 695 003 Date: 27.08.2020

	Time: 16.30 hours (IST)
ITB 25.4	“The Letter of Bid, Bills of Quantities and letter(s) of modification to bid/discount in bid prices, if any, shall be initialled by representatives of the Employer attending the bid opening.”
E. Evaluation and Comparison of Bids	
ITB 31.2	<i>Delete ITB Clause 31.2 and insert the following</i> 31.2 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 may be forfeited in accordance with ITB 19.6(b).
ITB 32.1	Not Applicable
ITB 33.1	Not Applicable
ITB 34.5	<i>Add the following to ITB Clause 34.5</i> The Bid shall be considered seriously unbalanced if the value of any one single year of the Periodic Maintenance cost exceeds 20% of the total Periodic Maintenance costs.
ITB 34.6	The combined price for the Initial Rectification, Periodic Maintenance and Minor Improvement Works may not exceed the following threshold: The amount of Rupees 50 crore (Rupees Fifty crore only)
ITB 35.2 (e)	<i>Delete ITB Clause 35.2(e) and insert the following</i> 35.2 (e) <i>The total provisional sum stipulated in schedule 5 for the Emergency works</i>
ITB 40.1	<i>Delete ITB Clause 40.1 and insert the following</i> 40.1 The contract agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and kept ready (along with the Letter of Acceptance) for signature of the successful bidder in the Office of the Employer within 10 days following the notification of the award.
ITB 40.2	<i>Delete ITB Clause 40.2 and insert the following</i> 40.2 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.
ITB 41.1	“ Period of 28 days mentioned in the first sentence of the ITB clause 41.1 should be amended to read as 21 days ”
ITB 42.1	<i>Insert new Clause</i> 42.1 Dispute Review Expert The Employer proposes that Sri be appointed as Dispute Review Expert under the contract at a daily fee of Rs./- plus reimbursable expenses. The daily fees is applicable during site visits and conducting

	<p>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, Thiruvananthapuram 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.</p>
--	--

Section-III

Evaluation and Qualification Criteria

Section III. Evaluation and Qualification Criteria (Without Prequalification)

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 34 and ITB 36, 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 Alternative Completion Times, (if permitted under ITB 13.2, will be evaluated as follows: **Not Applicable**

1.3 Technical alternatives, if permitted under ITB 13.4, will be evaluated as follows: **Not Applicable**

1.4 Assessment of price as listed in ITB 34.2 (a) – (e) 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 submitted 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.; and/or
- 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 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.2014-15 to 2018-19** 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 **2021-22 price level***.

N = 5 years.

B = Value at 2021-22* 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 2021-22* price level of the existing commitments and ongoing 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.

- * Value of works of the previous financial years shall be given a weightage of 8 % per year to bring costs to 2021-22 price level

2. Qualification

Factor	2.1 ELIGIBILITY					
	Sub-Factor	Requirement	Criteria			Documentation Required
			Single Entity	Bidder		
				All partners combined	Each partner	
2.1.1 <u>Nationality</u>	Nationality in accordance with ITB 4.2	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form ELI – 1.1 and 1.2, with attachments</i>
2.1.2 <u>Conflict of Interest</u>	No- conflicts of interests as described in ITB 4.3.	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>
2.1.3 <u>Bank Ineligibility</u>	Not having been declared ineligible by the Bank as described in ITB 4.4.	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>
2.1.4 <u>Government Owned Entity</u>	Compliance with conditions of ITB 4.5	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form ELI –1.1 and 1.2, with attachments</i>
2.1.5 <u>Ineligibility based on a United Nations resolution or Country law</u>	Not having been excluded as a result of the Government laws or official regulations, or by an act of compliance with UN Security Council resolution, in accordance with ITB 4.7	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Letter of Bid</i>

Factor	2.1 ELIGIBILITY					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, <i>Consortium or Association</i>			
		All partners combined	Each partner	At least one partner		
2.1.6 <u>Eligible Bidders</u>	Special Class or equivalent Contractors, registered with the Government of Kerala, or other State Government/ Government of India, or State/Central Government undertakings	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form ELI – 1.1 and 1.2, with attachments</i>

Factor	2.2 HISTORICAL CONTRACT NON-PERFORMANCE					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, <i>Consortium or Association</i>			
		All partners combined	Each partner	At least one partner		
2.2.1 <u>History of non-performing contracts</u>	Non-performance of a contract did not occur within the last five (5) years i.e.2014-15 to 2018-19prior to the deadline for application submission, based on all information on fully settled disputes or litigation. A fully	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>N / A</i>	<i>Form CON - 2</i>

Factor	2.2 HISTORICAL CONTRACT NON-PERFORMANCE					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, <i>Consortium or Association</i>			
All partners combined			Each partner	At least one partner		
	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.					
2.2.2 <u>Pending Litigation</u>	All pending litigation shall in total not represent more than Rs 2,00,00,000 (two crore) and shall be treated as resolved against the Bidder.	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must not be more than 50% for each partner</i>	<i>N / A</i>	<i>Form CON – 2</i>

Factor	2.3 FINANCIAL SITUATION					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined			Each partner	At least one partner		
2.3.1 <u>Historical Financial Performance</u>	Submission of audited balance sheets or if not required by the law of the bidder's country, other financial statements acceptable to the Employer, for the last five [5] years i.e 2014-15 to 2018-19 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 2014-15 to 2018-19	<i>Must meet requirement</i>	<i>Must meet requirement</i>	<i>Must meet requirement</i>	N/A	<i>Form FIN – 3.1 with attachments</i>

Factor	2.3 FINANCIAL SITUATION					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined			Each partner	At least one partner		
2.3.2 <u>Average Annual Turnover</u>	Minimum average annual turnover of Rs 14 crore- (Rupees Fourteen crore only) (calculated as total certified payments received for contracts in progress or completed, within the last five years (5) years i.e 2014-15 to 2018-19)	Must meet requirement	Must meet requirement	N/A	Must meet 50% of requirement	Form FIN –3.2

Factor	2.3 FINANCIAL SITUATION					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined			Each partner	At least one partner		
2.3.3 <u>Financial Resources</u>	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 Rs5 crore (Rupees Five crore only)	<i>Must meet requirement</i>	<i>Must meet requirement</i>	N/A	<i>Must meet 50% of requirement</i>	<i>Form FIN –1</i>

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 2020-2021 price level.

Factor	2.4 EXPERIENCE					
Sub-Factor	Criteria				Documentation Required	
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
All partners combined	Each partner	At least one partner				
2.4.1 <u>General Experience</u>	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 2014-15 to 2018-19) prior to the applications submission deadline, and with activity in at least nine (9) months in each year	<i>Must meet requirement</i>	<i>Must meet requirement</i>	N/A	<i>Must meet requirement</i>	<i>Form EXP-4.1</i>
2.4.2 <u>Specific Experience</u>	a) Participation as contractor, management contractor, or subcontractor or BOT, BOOT Developer / Operator, with in the last five(5) years(i.e 2014-15 to 2018-19), in road construction or maintenance works contracts, of which up to four contracts have a combined value not less than Rs 70 crore (Rupees Seventy Crore only) , and have been successfully	<i>Must meet requirement</i>	<i>Must meet requirement</i>	N / A	<i>Must meet 50% of requirement</i>	<i>Form EXP 4.2(a)</i>

Factor	2.4 EXPERIENCE					
Sub-Factor	Criteria				Documentation Required	
	Requirement	Bidder				
		Single Entity	<i>Joint Venture, Consortium or Association</i>			
			All partners combined	Each partner	At least one partner	
	<p>and substantially completed. The completed works should be similar to proposed works and services in the proposed contract.</p> <p>For the purpose of the above requirement:</p> <p>(i) LTPBMC/OPBRC 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;</p> <p>(ii) all other types of contracts shall be considered as substantially completed if the contractor has completed 90% of the Value of Works.</p>					

Factor	2.4 EXPERIENCE					
Sub-Factor	Criteria				Documentation Required	
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
			All partners combined	Each partner	At least one partner	
2.4.2 <u>Specific Experience</u>	b) For the above or other contracts executed in any one year, the bidder should have executed the following minimum quantities of work: <ul style="list-style-type: none"> ▪ Concrete works (MoRTH Specification Section 1703 all grades) –2500cum ▪ Non Bituminous Sub-bases and Bases (CRB, GSB, WBM, WMM) (MoRTH Specification Sections 400) - 1000 cum ▪ Bituminous Treatment (BM, DBM, BC,) (MoRTH Specification Sections 500) – 11500 cum 	<i>Must meet requirements</i>	<i>Must meet requirements</i>	<i>N / A</i>	<i>Must meet 50% of requirements</i>	<i>Form EXP- 4.2(b)</i>

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 2020-2021 price level.

2.5 Personnel

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

Position	No.	Educational Qualification	Total Work Experience in construction and maintenance (years)
Road Manager	1	Graduate in Civil Engg. / Diploma in civil Engg.	Graduate – 07 Diploma - 10
Maintenance Engineer	1	Diploma in civil Engg.	07
Asphalt Works Supervisor	1	Preferably Diploma in civil Engg/ any general degree holder	Diploma – 10 General Degree – 15
Health & Safety Officer	1	Degree with Certification from OHSAS / NEBOSH	3 years in preparation of HS Management Plan / Procedure, Environmental, Potential Risk Register / Mitigation Plan, HS Audit Plan/Procedure etc. Desirable: Operational experience in infrastructure/ construction industry

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:

Sl. No.	Type of Equipment	Capacity	Number required
1	Excavators	Minimum 1 m3 bucket size	1
2	Hydraulic excavator with rock breaker	6 cum per hour	1
3	Front End Loader	Minimum 1 m3 bucket size	1
4	a) Smooth Wheel Roller b) Vibratory Roller c) Pneumatic Tyred Roller	8 - 10 ton 8 - 10 ton 8 tyred with self-inflating system	1 1 1
5	Paver Finisher with electronic sensors for automatic level control.	Capable of paving 6m width and up to 200 mm lift	1
6	Bitumen Sprayer	1750 sqm/hour	1
7	Water Tanker	6000 litre	1
8	Dump Truck	8 – 10 ton	4
9	Batch Type Hot Mix Plant	100 ton/hr	1
10	Power broom		1
11	Concrete Mixer with Integral Weigh Batching Facility	1 m3	1
12	Total Station with Accessories	Minimum 2 sec accuracy	1
13	Auto-Level with Micrometer	-	1

All the equipment except 9 as listed above shall be deployed at site within a period of 6 weeks from the date of signing of agreement. Batch Type Hot Mix Plant need to be made operational within 120 days from the date of signing of agreement. 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. The bidder shall furnish an under taking on Rs 200/- stamp paper that in case of awarding of work to him, he will fabricate & convert new 6 tonne truck into a Patrol

Maintenance Unit (PMU) duly satisfying the terms specified in clause C2 under section VI of technical specifications within 30 days from the date of signing agreement ,

2. The bidder shall furnish an under taking on Rs 200/- stamp paper that in case of awarding of work to him, he will procure Bump Integrator or equivalent sensor based equipment& new Road Management Unit (RMU),duly satisfying the terms specified in clause C2 under section VI of technical specifications, that shall have a twin cab utility vehicle painted and labelled appropriately for safety and public awareness to the Engineer’s satisfaction within 30 days from the date of signing agreement .

2.7 Method Statements

The Bidder must demonstrate, through the rightly worded method statements for the 5 sub-components of the desired maintenance works (IR,MI,OM,PM & EW) that he has understood &will deliver the works requirements correctly. If the Method Statements are found vague, not meeting the requirements and are likely to not deliver the contractual outcomes, bidder shall be eliminated without considering his financial bids.

The bidders may also be asked for presentation of their method statement, if needed.

2.7. 1	Maintenance Works (OM &PM)	Method Statement articulates a clear understanding of the scope of activities under Maintenance Services, and that the assigned resources (staff and equipment), information management systems, and methodologies will likely deliver full compliance with all contractual requirements.	Must meet requirements	Form MTH 1: Method Statements, Part 1: Maintenance works
2.7. 2	Rehabilitation Works (IR&MI)	Method Statement articulates are clear understanding of the scope of activities under Rehabilitation Works, and that the assigned resources (staff and equipment), and methodologies (including proposed contractors QA testing regime) will likely deliver full compliance with all contractual requirements.	Must meet requirements	Form MTH 1: Method Statements, Part 2: Rehabilitation Works

2.7. 3	Emergency Works (EW)	Method Statement articulates a clear understanding of the scope of activities under Emergency Works, how Emergency Works are triggered, and how the contractor will deploy resources (staff and equipment) such that it is likely deliver full compliance with all contractual requirements.	Must meet requirements	Form MTH 1: Method Statements, Part 3: Emergency Works
-------------------	-----------------------------	--	------------------------	--

Section IV. Bidding Forms

- **LETTER OF BID- TECHNICAL PART**
- **LETTER OF BID- FINANCIAL PART**
- **BID SECURITY**
- **WORK SCHEDULES**
- **TECHNICAL PROPOSAL**
- **EVALUATION AND QUALIFICATION FORMS**
- **DECLARATION REGARDING CUSTOMS FORM**

Letter of Bid– Technical Part

Date:

NCB No.: KSTP-OPBRC-I

Invitation for Bid No.:

To:

Project Director

Kerala State Transport Project (KSTP)

Project Management Team

T.C. 11/339, SreeBala Building

Keston Road, Nanthancode, Kowdiar P.O.

Thiruvananthapuram – 695003

Kerala

We, the undersigned, hereby submit our Bid, in two parts, namely:

- (a) the Technical Part, and
- (b) the Financial Part

In submitting our Bid, we make the following declarations:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (**ITB**);
- (b) We meet the eligibility requirements and have no conflict of interest in accordance with **ITB**;
- (c) We have not been suspended nor declared ineligible by the Authority based on execution of a Bid Securing Declaration in the Authority's country in accordance with **ITB** .
- (d) We offer to execute in conformity with the Bidding Documents the following Works:
Output and Performance based Road Contract for the Maintenance of Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & Pathanamthitta Districts of KERALA
- (e) Our bid shall be valid for a period of **150 days** from the date fixed for the bid submission deadline (**i.e.**) **27/08/2020** in accordance with the Bidding Documents, and it shall remain

binding upon us and may be accepted at any time before the expiration of that period;

- (f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;
- (g) We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Authority's country laws or official regulations or pursuant to a decision of the United Nations Security Council;
- (h) We are not a government owned entity/ We are a government owned entity but meet the requirements of **ITB**.
- (i) 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
- (j) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (k) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption

Name of the Bidder**[insert complete name of person signing the Bid]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder***[insert complete name of person duly authorized to sign the Bid]*

Title of the person signing the Bid*[insert complete title of the person signing the Bid]*

Signature of the person named above *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* day of *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** : Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.

Letter of Bid-Financial Part

Date: _____
 NCB No.: _____
 Invitation for Bid No.: _____

To: The Project Director, KSTP
T.C. 11/339,SREE BALA Building, Keston Road,
 Kowdiar P.O,Thiruvananthapuram, Kerala, India - 695003

We, the undersigned, declare that:

- (h) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (i) 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:

Description	Amount (in numbers)
(a) Ordinary Maintenance Services in an amount of <i>[amount in words] [name of currency].</i>	
(b) Initial Rectification Works in an amount of <i>[amount in words] [name of currency].</i>	
(c) Periodic Maintenance Works in an amount of <i>[amount in words] [name of currency].</i>	
(d) Minor Improvement Works in an amount of <i>[amount in words] [name of currency].</i>	
(e) Emergency Works in an amount of <i>[amount in words] [name of currency]</i>	
TOTAL = a+b+c+d+e	Rs

- (j) We here by 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 14.7 read with ITB Bid Data Sheet Clause 14.7.

- (k) We hereby confirm that our combined price for Initial Rectification Works, Periodic Maintenance Works and Minor Improvement Works does not exceed the threshold given in the BDS (34.6), which is *[insert amount or percentage of the total contract price]*.
- (l) We hereby confirm that the value of any one single year of the Periodic Maintenance does not exceed 20% of the total Periodic Maintenance value.
- (m) 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, have or will have nationalities from eligible countries, in accordance with ITB-4.2;
- (j) 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;
- (k) 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-13;
- (l) We accept the appointment of _____ as Dispute Review Expert.
 (OR)
 We do not accept the appointment of _____ as Dispute Review Expert and propose instead that _____ be appointed as Dispute Review Expert whose daily fees and biographical data are attached.
- (m) We accept daily fees /- 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 /- plus reimbursable expenses for Dispute Review Expert and our proposal for daily fee is attached.
- (n) We, including any of our subcontractors or suppliers for any part of the contract, have not been declared ineligible by the Bank, under the Employer’s country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;

- (o) We are not a government owned entity/We are a government owned entity but meet the requirements of ITB-4.5;¹
- (p) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(If none has been paid or is to be paid, indicate “none.”)

- (q) 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
- (r) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (s) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.
- (t) 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 _____, _____

¹Bidder to use as appropriate

BID SECURITY (BANK GUARANTEE)

WHEREAS, _____ [name of Bidder] (hereinafter 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 _____ (hereinafter called "the Bank") are bound unto _____ [name of Employer] (hereinafter called "the Employer") in the sum of _____* for which payment well and truly to be made to the said Employer the Bank binds 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 of 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 Clause 31;

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 him 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 45 days after the end of the validity period of the bid (i.e. 195 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 OF THE BANK _____

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 in Clause 19.1 of the Instructions to Bidders.

** 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 7 year period of the Contract.

Schedule 2 – Initial Rectification Works (Lump Sum)

Schedule includes Initial Rectification Works to be completed within the first 9 Months to bring the road to above intervention standard. Initial Rectification Works is a firm lump sum that will be measured and paid on the actual work outputs subject to maximum amount upto the lump sum quoted amount.

Schedule 3 –Periodic Maintenance Works(Lump Sum)

Schedule includes Periodic Maintenance Works for Years 1 to 6 is a firm lump sum that will be measured and paid on the actual work outputs subject to the maximum lump sum quoted amount.

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. Only the actual quantities of work completed as certified by the Engineer will be paid.

Schedule 5–Emergency/Day Works (Provisional sum)

Comprises provisional sum for emergency /day works that may be instructed by the Engineer. Only the actual quantities of work completed and approved by the Engineer 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 quoted lump sum price divided by the duration in months for each category of maintenance works classified as Type A or Type B. Reference is made to Activity Schedule 1.
3. 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, but subject to maximum lump sum amount as per the quote by the Contractor.**

4. 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, but subject to maximum lump sum amount as per the quote by Contractor ;**
5. 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 and valued at the rates and prices tendered in the priced Works Schedule.
6. 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 set out or implied in the Contract.
7. 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.
8. 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.
9. 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.
10. Emergency / Daywork 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. New rates for other items not covered under Schedule 4, 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 14.2).
 - b) Unit rates and prices shall be quoted by the bidder in Indian rupees [ITB Clause 15.1].
 - c) Where there is a discrepancy between the rate in figures and words, the rates in words will govern. [ITB Clause 31]
 - d) Where there is a discrepancy between the unit rate and the amount, the unit rate quoted shall govern [ITB Clause 31].
 - e) Price escalation is allowed for all the schedules as per clause 48 of the general conditions.

Works Schedule 1, 2, 3, 4 and 5

Name of work: Output and Performance based Road Contract for the maintenance of Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & Pathanamthitta District of Kerala

Bid Summary Schedule

Sched. No.	Description	Amount (Rs)	Amount in Words
1	Schedule 1 – Ordinary Maintenance (Lump Sum) a) Type A works b) Type B works		
2	Schedule 2 – Initial Rectification Works(Lump Sum) – Initial works to bring the road to below the Intervention level(to be executed within 9 Months)		
3	Schedule 3 – Periodic Maintenance(Lump Sum) – Years, 1,2, 3, 4, 5 and 6		
4	Schedule 4 – Minor Improvement Works Unit Rates(Reconstruction and widening of narrow minor bridges, Widening of culverts) Years 1 and 2		

5	Schedule 5 – Emergency Works/ Day works (Provisional Sum)		
Total Bid Price (in figures)			
Total Bid Price (in words)			

SCHEDULE 1 – ORDINARY MAINTENANCE (LUMP SUM)

Item No.	Description of item	Quantity in Km - months	Rate Per Month per Km	Amount In figure (Rs)	Amount In words (Rs)
1	Type A works (107.753 km)	4920 (see note no. 2 below)			
2	Type B works (107.753Km)	9051			
	Total Schedule 1 Price				
	Transfer total to Bid summary Schedule				

Note:

- 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 hire, maintenance, staff, logistics and operational costs of RMU & PMU, all social, environmental, safety and traffic management requirements, conducting various Inspections , surveys etc.
- For details of Type A and Type B works, refer to the Technical specifications. Duration (quantity) of Type A activities need to be assessed in consideration of its non-applicability during the construction period and Defects Liability Period. The maximum period of 72 months is worked out based on the fact that Type A activity will not be applicable at least for a period of 12 months Defects Liability Period.
- 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%.
- Activities under Type A works include maintenance of main carriageway, paved shoulders, additional paved area at junctions, curves and any other additional lanes.
- The cost difference as per BDS clause 34.6 assessed by the bidder if any is deemed to be included in the quoted Ordinary Maintenance Lump-sum cost.
- In case of inconsistency in quantity, rates and amount, the total LS amount as quoted will be taken and monthly rate back calculated. In any case, the final payment will not exceed the LS quoted amount.

Schedule 2. INITIAL RECTIFICATION WORKS(Lump Sum)

Work and materials shall be in accordance with the MORTH Specification clause in B3

No	Description of Item	Quantity	Unit	Rate (Rs)		Amount in Rs
				In Words	In Figures	
1	Clearing grass and removal of rubbish from median, shoulder and footpath on both sides of the road					
	Two Lane with Paved Shoulder		km			
	Two Lane		km			
2	Repairs to shoulders /Construction of gravel shoulders on both sides of the carriageway wherever required to bring the service level (with 3% camber)					
	a) Repairs to low shoulders by construction of gravel shoulder as per MoRTHSpecification 10.2					
	Two Lane with Paved Shoulder		km			
	Two Lane		km			
3	Treatment to Bituminous carriage way wherever required to bring the specified service level for by taking up:					
	a) Fog Seal					
	b) Slurry Seal					
	c)Dismantling Cracked area/Minor Dig out/deep pothole					
	d)Slurry Seal at Ravelled portion					
	e) Repair of pothole					
	f) Repair of Edge Damage					
	Two Lane with Paved Shoulder		km			

	Two Lane		km			
4	Rectification of Paved Shoulder wherever required					
	a) Dismantling existing paved shoulder					
	b) Providing CC shoulder					
	Two Lane with Paved Shoulder		km			
5	Rectification of Footpath wherever required					
	a) Dismantling tiles on footpath					
	b) Laying Paver Block Laying 60mm thick					
	c) Repair of footpath					
	Two Lane with Paved Shoulder		km			
6	Rectification of Median and Kerb wherever required					
	a) Construct median					
	b) Dismantle kerb stone					
	c) Construct kerb					
	Two Lane with Paved Shoulder		km			
7	Repair of Handrails and Providing GI Handrail wherever required					
	Two Lane with Paved Shoulder		km			
8	Repairs to cross drainage works including culverts, minor bridges, major bridges to specified service levels by taking up Cleaning and repair to serviceable level as specified		no			

9	Bringing up Road safety features along the project road to the serviceable level as specified including works like refurbishment, repair, replacement and providing new					
	Two Lane with Paved Shoulder		km			
	Two Lane		km			

TOTAL SCHEDULE 2 PRICE(IN FIGURES)		
Transfer total to Bid Summary Schedule		
Note:		
<p>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 are 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.</p> <p>2. The bidder has to quote his lump sum amount duly assessing the current condition and deterioration module of the road.</p>		

SCHEDULE 3- PERIODIC MAINTENANCE WORK ITEMS (LumpSum)-Years 1 to 6

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

Item No.	Description of Item	Annual Quantity	Unit	Rate(Rs)		Amount(Rs)
				In figures	In words	
	<p>Providing Periodical maintenance to Pavement surface including profile correction with the following items of work to obtain the required service level.</p> <p>a) Tack coat with bitumen emulsion(RS) using emulsion pressure distributor at the rate of 0.20 - 0.30 kg per sqm on the prepared bituminous surface cleaned with mechanical broom.</p> <p>b) Providing and laying bituminous concrete with 80-100 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with a bituminous binder(NRMB) @ 5.4 percent 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. 507 complete in all respects</p> <p>For Grading - II (13.2 mm Nominal Size)</p> <p>c) Providing necessary pavement marking as per IRC 35 using hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads on Bituminous Surface @ 250 gms per sqm area, the 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.</p> <p>e) Providing necessary road studs as per IRC 35 (Raised Pavement</p>		km			

Marker) of ' category A' made out of ASA/HIPS/ABS moulded body with shanks and conforming to ASTM D 4280, strong enough to support a load of more than 13.635 T when tested in accordance with ASTM D 4280, reflective panel conforming to ASTM D 788, and reflectivity conforming to clause 804.4. including installation, drilling, fixing with adhesive etc. with 2 years warranty for the road stud as well as for in field performance as per clause 804.7.3					
TWO LANE WITH PAVED SHOULDER					
YEAR I		km			
YEAR II		km			
YEAR III		km			
YEAR IV		km			
YEAR V		km			
YEAR VI		km			
TWO LANE					
YEAR I		km			
YEAR II		km			
YEAR III		km			
YEAR IV		km			
YEAR V		km			
YEAR VI		km			
Maintenance of Earthen Shoulder (filling with fresh soil) Making up the loss of material/ irregularities on the shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment.					
YEAR I		km			
YEAR II		km			
YEAR III		km			

	YEAR IV	km			
	YEAR V	km			
	YEAR VI	km			

	LUMPSUM TOTAL SCHEDULE 3 PRICE FOR YEARS 1 TO 6(IN FIGURES)	
	Transfer total to Bid Summary Schedule	
<p>Note 1-All rates shall be subject to Price Adjustment</p> <p><u>As a guide</u> a list of quantities of Periodical maintenance activities have been provided in Clause E2 of the Technical Specification <u>to assist the contractor</u> 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.</p> <p>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.</p>		

Schedule 4. MINOR IMPROVEMENT WORKS

MoRTH Item No.	Description of Item	Quantity	unit	Rate(Rs)		Amount(Rs)
				In figures	In words	
YEAR I Work						
3.15	Scarifying the existing bituminous road surface		sqm			
5.2.a	Providing and applying tack coat with bitumen emulsion(RS)		sqm			
5.4.2a	Dense Graded Bituminous Macadam:- For Grading II (26.5 mm nominal size) with 80-100 TPH HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with a bituminous binder (VG 30) @ 4.0 to 4.5 percent by weight of total 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. 505 complete in all respects.		cum			

5.6.2.a.1	Providing and laying bituminous concrete with 80-100 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with a bituminous binder(NRMB) @ 5.4 percent of mix and filler with Anti stripping additive material 1.0 kg per 1 tonne of bitumen, 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. 507 complete in all respects Grading - II (13.2 mm Nominal Size)		cum			
2.5.1.A	Dismantling of flexible pavements-Bituminous courses		cum			
2.5.1.B	Dismantling of flexible pavements-Granular courses		cum			
4.1.B.1	Construction of granular sub-base Grading-V - For sub-base cum drainage layer - Mix in Place Method		cum			
4.12	Providing, laying, spreading and compacting graded stone aggregate to Wet Mix Macadam		cum			
12.8.F.1.1	PCC Grade M30 - Using Concrete Mixer		cum			
3.27	Construction of subsurface drain with perforated pipe of 100 mm internal diameter		m			

	Based on MoRTH Data 55.23 - Supplying and laying interlocking tile 80 mm or nearest available size thick (premium), of grade M30, including providing a layer of coarse sand 5 cm thick, then laying interlock cobbles in lines and levels as per the direction of departmental officers at site including all cost, conveyance, labour charge etc. complete.		sqm			
	As per 55 OD MoRTH and 6.7.1 MORD - Supplying and laying paving block 60mm thickness of minimum strength M30 and technical specification as per IRC SP 63- 2004 including providing sand bed of compacted thickness 30mm , including all cost and conveyance charges etc complete excluding edge block.		sqm			
Year II Work						
3.13.1.B	Earth work in excavation of foundation		cum			
12.4	Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate		cum			
13.4.A	Random Rubble Stone masonry (coursed/uncoursed) work in cement mortar 1:3 for sub structure		cum			
13.8	Providing weep holes		no			
13.10	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications		cum			
12.8.A.1	PCC Grade M15		cum			
13.5.E.P.1	Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications RCC Grade M20 -		cum			

13.60	Supplying, fitting and placing HYSD bar reinforcement in sub-structure		MT			
55.25	Lifting, conveying and fixing the newly casted RCC covering slabs of any thickness on top of drain in position including all labour charges and miscellaneous expenses etc complete		cum			
16.83 (DAR)	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.		sqm			
16.84(DAR)	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost.)		sqm			

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

Transfer Total to Bid Summary Schedule	
---	--

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

SCHEDULE 5. EMERGENCY WORKS/DAY WORKS

Sl.No.	Description	Amount Rs.
	Provisional Sum towards Emergency Works /Day Works	
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 or provide the 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.

Period (Months)	Cost/Value of Initial Rectification, Periodic Maintenance and Minor Improvement Works <i>[indicate amount and currency]</i>	Cost/Value of Ordinary Maintenance Services <i>[indicate amount and currency]</i>	Net Payments to be received <i>[indicate amount and currency]</i>	Net Cash Flow
Start Date				
1 to 6				
6 to 12				
12 to 18				
18 to 24				
24 to 30				
30 to 36				
36 to 42				
42 to 48				
48 to 54				
54 to 60				
60 to 66				
66 to 72				
72 to 78				
78 to 84				
... etc.				
Total				

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 Project Management Units, 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 and Social Officer (ESO) who is familiar with Environmental and Social aspects of Road Projects and will be responsible for the Environmental and Social 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, if those are known at bidding stage. Bidders shall also list other business partners involved in the execution of the contract and their respective roles and responsibilities. It should be noted that sub-contracting is allowable only for plant and equipment hire, specialised works (i.e. shifting utilities), provision of labour and supply of materials.;

Part of Works / Services:

Approximate value:

Name and address of

proposed subcontractor / partner:

Part of Works / Services:

Approximate value:

Name and address of

proposed subcontractor / partner:

Part of Works / Services:

Approximate value:

Name and address of

proposed subcontractor / partner:

Part of Works / Services:

Approximate value:

Name and address of

proposed subcontractor / partner:

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.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture / Condition
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

The bidder should list all the information requested below 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 wither a certificate issued by the Executive Engineer (or) a Declaration on non-judicial stamp paper worth Rs 200/- 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 Ordinary Maintenance Services, 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

Position	Quantity	Name	Qualifications	Years of experience (Construction and Maintenance)
(1)	(2)	(3)	(4)	(5)
Road Manager	1			
Maintenance Engineer	1			
Asphalt Works Supervisor	1			
Health & Safety Officer	1			

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

“The Contractor shall deploy the Health & Safety Officer (HSO) for initial period for 2 years or till end of the IR & MI works are completed, which of the two is at later date. After end of the IR & MI works, the Contractor shall designate either the Road Manager or the Maintenance Engineer as the HSO, who is familiar with Health & Safety aspects of Road Projects and will be responsible for the Health & Safety Management”

Form PER-2**Resume of Proposed Personnel**

Name of Bidder

Position		
Personnel information	Name	Date of birth
	Professional qualifications	
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.

From	To	Company / Project / Position / technical and management experience in road construction and maintenance

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 and social 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 (PWD QC Manual) 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 VI, 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.
 - III. IRC SP 112-2017 “Manual for Quality Control in Roads and Bridges” shall be referred.
- 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 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;
4. **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;
5. **Form FIN 3.2** – Average annual Turnover;
6. **Form EXP 4.1** - experience in Construction works for each of the last five years,
7. **Form EXP 4.2(a)** - experience in works of a similar nature and size for each of the last five years,
8. **Form EXP 4.2(b)** - experience in works in Key Activities for each of the last five years,
9. **Form CCC** - details of works under way or contractually committed and clients who may be contacted for further information on those contracts;
10. **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;
11. **Form MTH 1**—method statements to provide evidence that the contractor has a correct conceptual understanding & intent to deliver the works & services required as per 5 different sub components in the OPBRC/RFP.

Note : In addition to the above documents, the bidder shall furnish the evidence of documents relating to GST, Registration, Latest Commercial Tax clearance Certificate, PAN card, Copy of Latest Income Tax Return etc.,

**Applicant Information Form
Form ELI -1.1**

The Bidder should provide the following information for:

Bidders legal name
In case of Joint Venture (JV), legal name of each partner:
Bidders country of constitution:
Bidders year of constitution:
Bidders legal address in country of constitution:
Bidders authorized representative information Name: Address: Telephone/Fax numbers: E-mail address:
Attached are copies of original documents of <input type="checkbox"/> Articles of Incorporation or Documents of Constitution, and documents of registration of the legal entity named above. <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement. <input type="checkbox"/> In case of Government owned entity, documents establishing legal and financial autonomy and compliance with commercial law. <input type="checkbox"/> Proof of registration as a contractor with Government of Kerala <input type="checkbox"/> Power of Attorney of Signatory of Bid

Attached are copies of original documents of <input type="checkbox"/> Articles of Incorporation or Documents of Constitution, and Registration Documents of the legal entity named above. <input type="checkbox"/> In case of a Government owned entity, documents establishing legal and financial autonomy and compliance with commercial law. <input type="checkbox"/> Proof of registration as a contractor with Government of Kerala
--

Applicant's Party Information Form

Form ELI -1.2

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

<p>JV applicant legal name: <i>[insert full legal name]</i></p>
<p>JV applicant's Party legal name: <i>[insert full legal name of Applicant's Party]</i></p>
<p>JV applicant's Party country of registration: <i>[indicate country of registration]</i></p>
<p>JV applicant Party's year of constitution: <i>[indicate year of constitution]</i></p>
<p>JV applicant Party's legal address in country of constitution: <i>[insert street/ number/ town or city/ country]</i></p>
<p>JV applicant Party's authorized representative information Name: <i>[insert full legal name]</i> Address: <i>[insert street/ number/ town or city/ country]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers, including country and city codes]</i> E-mail address: <i>[indicate e-mail address]</i></p>
<p>Attached are copies of original documents of</p> <p><input type="checkbox"/> Articles of Incorporation or Documents of Constitution, and Registration Documents of the legal entity named above.</p> <p><input type="checkbox"/> In case of a Government owned entity, documents establishing legal and financial autonomy and compliance with commercial law.</p> <p><input type="checkbox"/> Proof of registration as a contractor with Government of Kerala</p>

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 arising 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 in the currency/currencies of the Contract.
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
has been affixed in my/ our
presence pursuant to Board of
Director’s Resolution dated

For Lead Partner (Party No.-1)
For and on behalf of M/s
.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director’s Resolution dated

For Party No.-2
For and on behalf of M/s.....

Name

Designation

Signature

(Signature of the authorized
representative)

WITNESS :

I.

II.

Common Seal of
has been affixed in my/ our
presence pursuant to Board of
Director’s Resolution dated

For Party No.-3
For and on behalf of M/s.
.....

Name

Designation

(Signature of the authorized
representative)

Signature

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

Non-Performing Contracts in accordance with Section III, Qualification Criteria and Requirements			
<input type="checkbox"/> Contract non-performance did not occur during the five (5) years specified in Section III, Qualification Criteria and Requirements, sub-factor 2.2.1.			
<input type="checkbox"/> Contract(s) non-performed occurred during the five (5) years specified in Section III, Qualification Criteria and Requirements, sub-factor 2.2.1			
Year	Non performed portion of contract	Contract Identification	Total Contract Amount (Lakh Rs)
		Contract Identification: Name of Employer: Address of Employer: Reason(s) for non-performance:	
		Contract Identification: Name of Employer: Address of Employer: Reason(s) for non-performance:	

Historical Contract Non-Performance

Form CON – 2 (cont)

Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
<input type="checkbox"/> No pending litigation in accordance with Section III, Qualification Criteria and Requirements, sub-factor 2.2.2.			
<input type="checkbox"/> Pending litigation in accordance with Section III, Qualification Criteria and Requirements, sub-factor 2.2.2 as indicated below.			
Year	Outcome as Percentage of Total Assets	Contract Identification	Total Contract Amount (Lakh Rs)
		Contract Identification: Name of Employer: Address of Employer: Matter in dispute: Remark showing present Status:	
		Contract Identification: Name of Employer: Address of Employer: Matter in dispute: Remark showing present Status:	

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

Financial information in Lakh Rupees	Historic information for previous 5 (five) years,				
	Year 1 2014-15	Year 2 2015-16	Year 3 2016-17	Year 4 2017-18	Year 5 2018-19
Information from Balance Sheet					
Total Assets (TA)					
Total Liabilities (TL)					
Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					

2. Financial documents

The Bidder and its parties shall provide copies of the balance sheets and/or financial statements for **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 **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:

Annual turnover data		
Works executed payment received over the last five years		
Year	Amount and Currency	Lakh Rupees
2014-2015		
2015-2016		
2016-2017		
2017-2018		
2018-2019		
Average Annual Construction Turnover *		

* 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:

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.]

Starting Month /Year	Ending Month /Year	Contract Identification	Role of Applicant
		Contract name: Brief Description of the Works performed by the Applicant: Amount of contract: Name of Employer: Address:	
		Contract name: Brief Description of the Works performed by the Applicant: Amount of contract: Name of Employer: Address:	
		Contract name: Brief Description of the Works performed by the Applicant: Amount of contract: Name of Employer: Address:	

**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:

Similar Contract No.	Information		
Contract Identification			
Award date			
Completion date			
Role in Contract <i>[check the appropriate box]</i>	Contractor <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Subcontractor <input type="checkbox"/>
Total Contract Amount			
If partner in a JV, or subcontractor, specify participation in total contract amount			
Employer's Name:			
Address:			
Telephone/fax number			
E-mail:			

Description of the similarity in accordance with Sub-Factor 2.4.2(a) of Section III:	
1. Amount	
2. Physical size	
3. Complexity	
4. Methods/Technology	
5. Other Characteristics	

**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.

Information			
Contract Identification			
Award date			
Completion date			
Role in Contract <i>[check the appropriate box]</i>	Contractor <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Subcontractor <input type="checkbox"/>
Total Contract Amount			
If party in a JV, specify participation of total contract			
Employer's Name:			
Address:			
Telephone/fax number			
E-mail:			

Description of the key activities in accordance with Sub-Factor 2.4.2 (b) of Section III:	Quantity of Work Performed
Concrete Works MoRTH Spec 1703 all grades	
Non Bituminous Sub-Bases and Bases MoRTH Spec 400	
Bituminous Works MoRTH spec 500	

Note: Attach certificates in support of the above quantities issued by the Executive Engineer concerned and countersigned by the Superintending Engineer

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.

Name of contract	Employer, contact address/tel/fax	Value of outstanding work (current Lakh Rupees)	Estimated completion date	Average monthly invoicing over last six months (Lakh Rupees)
1.				
2.				
3.				
4.				
5.				
etc.				

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 and countersigned by the Superintending Engineer.

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.

Source of financing	Amount Lac Rupees
1.	
2.	
3.	
4.	

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, 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 [funded by the World Bank] 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.

__ Sd. __

Name of Bank

Senior Bank Manager

Address of the Bank

Form-----

**Output and Performance based Road Contract for the maintenance of
Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & Pathanamthitta
Districts of Kerala**

(Declaration regarding customs/excise duty exemption for materials/
construction equipment bought for the work)

Bidders Name and Address: _____

To:

The Project Director, KSTP,
T.C. 11/339, SREE BALA Building Keston Road, Nanthancode,
Kowdiar (P.O), Thiruvananthapuram -695003, Kerala.

Dear Gentlemen:

Re: Certificate for Import/Procurement of Goods/Construction Equipment

1. We confirm that we are solely responsible for obtaining customs/excise duty waivers which we have considered in our bid and in case of failure to receive such waivers for reasons whatsoever, the Employer will not compensate us.
2. We are furnishing below the information required by the Employer for issue of the necessary certificates in terms of the Government of India Central Excise Notification No. 108/95 along with all subsequent amendments including the amendment dated 1-3-2008 and customs Notification No. 85/99
3. The goods/construction equipment for which certificates are required are as under:

Items	Make/ Brand Name	Capacity (Where applicable)	Quantity	Value	State whether it will be procured locally or imported (if so from which country)	Remarks regarding justification for the quantity and their usage in works
Goods						
[a]						
Construction Equipment						
[a]						
[b]						

4. We agree that no modification to the above list is permitted after bids are opened.
5. We agree that the certificate will be issued only to the extent considered reasonable by the Employer for the work, based on the Works Schedule and the construction programme and methodology as furnished by us along with the bid.
6. We confirm that the above goods will be exclusively used for the construction of the above works and construction equipment will not be sold or otherwise disposed of in any manner for a period of five years from the date of acquisition.

Date: _____

(Signature)_____

Place: _____

(Printed Name)_____

(Designation) _____

(Common Seal)_____

Method Statements

Form MTH-1

Method Statements aligning to the three Parts below should articulate a clear understanding of the scope of activities under Maintenance Services (OM & PM) and Rehabilitation Works (IR & MI) and Emergency Works (EW). The response should provide a high degree of confidence that the assigned resources (staff and equipment), information management systems, and methodologies will likely deliver full compliance with all contractual requirements – including all social and environmental safeguard requirements.

The Method Statements do not need to be 100% detailed for every eventuality. The intent is for the contractor to demonstrate that they fully understand the scope of works and have a high degree of likelihood of meeting the contract requirements.

Part 1: Maintenance works (OM & PM)

The methodology should specifically address how the contractor will undertake the full range of inspections specified in the contract (Section VI, Part A, A11) to identify defects and compliance with the service levels, what information management system (database) will be used to manage defect data and assign works to the maintenance teams, where maintenance depots will be located, how defects will be scheduled and repaired, and other items that the contractor deems essential to demonstrating that they will deliver full compliance with the relevant contractual requirements.

Indicative traffic control configurations for typical maintenance repair works on the shoulder, or in the traffic lane should be provided.

Disposal methods for materials, debris, vegetation and dead animals removed from the network during the delivery of maintenance works should be summarized.

Part 2: Rehabilitation Works (IR & MI)

The methodology should identify for each main work type (pavement construction, resurfacing, pavement markings, drainage etc.) the key stages to be undertaken, any hold points, the proposed QA testing regime, resources (staff and equipment) to be deployed etc.

Indicative traffic control configurations for typical IR and MI works should be provided, including proposed maximum length of active work sites.

Disposal methods for materials and debris removed from the network during the delivery of the works should be summarized.

Part 3: Emergency Works (EW)

The methodology should articulate a clear understanding of the scope of activities under Emergency Works, how Emergency Works are triggered, and how the contractor will deploy resources (staff and equipment) such that it is likely deliver full compliance with all contractual requirements.

SECTION –V
ELIGIBLE COUNTRIES

Section V. Eligible Countries**Eligibility for the Provision of Goods, Works and Services in
Bank-Financed Procurement**

1. In accordance with Para 1.8 of the Guidelines: Procurement under IBRD Loans and IDA Credits, dated May 2004, the Bank permits firms and individuals from all countries to offer goods, works and services for Bank-financed projects. As an exception, firms of a Country or goods manufactured in a Country may be excluded if:

Para 1.8 (a) (i): as a matter of law or official regulation, the Borrower's Country prohibits commercial relations with that Country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of the Goods or Works required, or

Para 1.8 (a) (ii): by an Act of Compliance with a Decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's Country prohibits any import of goods from that Country or any payments to persons or entities in that Country.

2. For the information of borrowers and bidders, at the present time firms, goods and services from the following countries are excluded from this bidding:

-Nil-

PART 2

TECHNICAL SPECIFICATIONS

SECTION -VI
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 & Social Requirements**

Section VI, Part A

Management Requirements

A1.	Output- and Performance-based 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 & Major 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, 4, 5&6 Reports.....	
	A13.2.5 Milestone 7 (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. Output & Performance Based Roads Contract Concept

1. Output- and Performance-based contracting for roads 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 **OPBRC** 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 also paid on BOQ basis. Whenever Emergency/Day works are executed through specific work orders, the same are paid based on measured outputs.

4. A fundamental feature of the OPBRC 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 OPBRC, 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 and social 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, asphaltic 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 OPBRC to define and measure the desired performance of the Contractor. In the OPBRC, 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
- (c) **Road Roughness** measures, are expressed in terms of:
- Road Roughness
- (d) **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).
 - Environmental and Social 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) flat, hilly or mountainous terrain, (iv) sub-grade quality and type, (v) quality of available construction materials, (vi) capacity of available contractors, (vii) any environmental constraints, such as protected areas, parks, forest reserves, etc. **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 OPMC 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 Network.

12. Some emergency works should always be foreseen. Those 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 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 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 (supervision consultant) 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 Engineer or his representative confirming approval to do any work outside those activities included in the Lump Sum payment (i.e. Emergency Dayworks, 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 Engineer Employer (e.g. State Highway No 1, Sector 5).
- (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 under the PWD System.
- (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.

A4.1 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 **107.753 kilometres** in Ernakulam, Kottayam, Alappuzha & Pathanamthitta District. 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 7 years

The project involves maintenance of the following roads in Ernakulam, Kottayam , Alappuzha & Pathanamthitta Districts.

Sl No	Name of Road	Length in km	District
1	Chengannur – Angamali road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam
2	Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannur]	9.514	Alappuzha
3	Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannor to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta
	Total length	107.753 km	

The lane wise details are given below:

Two lane with paved shoulders : 86.569 kms
Two Lane with earthen shoulders : 21.184 kms

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

1. Ordinary Maintenance - 84 Months
2. Initial Rectification - within 9 Months
3. Periodic Maintenance - within 72 Months
4. Minor Improvements - within 24 Months
5. Emergency Works - 84months

Ordinary Maintenance:

The Contractor has to take up OM for a period 7 years (84 Months) for a length of 107.753 km as per OM specification specified in section VI of Part C. OM commences on the first day of contract signing for all road sections in the contract and not just when Initial Rectification, Periodic Maintenance or Minor Improvements have been completed.

It must be noted that defect liability period for any implemented work shall be considered as per the Government of Kerala (GoK) guidelines & defect rectification compliance shall be monitored accordingly.

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 9 months as per specification specified in the section of Part D.

Periodic maintenance:

This is the Component where in the pavement resurfacing activities (Laying of Bituminous Concrete, Construction of Gravel Shoulders, Providing Centre line marking, Edge line marking and other necessary markings as per IRC 35 and Road Studs) are to be taken that are beyond Ordinary Maintenance Activities to meet the service level as per specification specified in section VI of Part E. The executing agency has to apply the bituminous concrete overlay for the entire road area within a period of 6 Years (72Months).

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 VI of Part F.

Emergency Works:

Provision 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 VI 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 in the District of Ernakulam, Kottayam , Alappuzha & Pathanamthitta under the control of the Chief Engineer, Roads (PWD), Thiruvananthapuram 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 District. 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 Engineer 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 Engineer.

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

The work is located in the Ernakulam, Kottayam , Alappuzha & Pathanamthitta District in the State of Kerala as shown in Appendix A and detailed in the Table below:

Sl No	Name of Road	Length in km	District
1	Chengannur – Angamali road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam
2	Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannor]	9.514	Alappuzha
3	Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannor to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta
	Total length	107.753 km	

(ii) The Sections of the roads to be excluded due to works completed by others.

S.No.	Name of the road	Reach taken up within the contract	Road Sections for which works are to be taken up by other agencies	Road Sections currently under Defect Liability Period (DLP) by other agencies	DLP
1	Chengannur - Angamaly Road From Aida Junction to Angamaly (Excluding Moovattupuzha Town Portion)	151/000 to 205/624 207/555 to 240/000	nil	233/000 to 240/000	up to August 2022
2	Mavelikkara - Chengannur starting from Kollakkadavu	6/986 to 16/500	nil	nil	-
3	Chengannur to Kozhencherry	16/500 to 28/300 excluding 130m bridge at 19/500 (Iycad bridge)	nil	nil	-

Note:

1. Data given are indicative only, actual details to be confirmed by the Engineer.
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 paid 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, Periodic 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, 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 Engineer 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.

Key Positions	Function
1. Road Manager	Head the SCU and control compliance activities and reporting activities
2. Maintenance Engineer	Head the overall control and supervision of the day-to-day site activities
3. Asphalt Works Supervisor (s)	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.
4. Health & Safety Officer	Responsible for the Health and Safety Management

“The Contractor shall deploy the Health & Safety Officer (HSO) for initial period for 2 years or till end of the IR & MI works are completed, which of the two is at later date. After end of the IR & MI works, the Contractor shall designate either the Road Manager or the Maintenance Engineer as the HSO, who is familiar with Health & Safety aspects of Road Projects and will be responsible for the Health & Safety Management””

A11 Methods of Inspection of Service Levels

A11.1 Formal Inspections of Service Levels

The Engineer 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 Engineer, 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 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.

Code	Inspection Type	Minimum Frequency
R	Routine	Monthly
H	Hazard	Weekly
B	Bridge and Major	6 monthly or immediately after flood event
N	Night	6 monthly
E	Emergency	Immediately on receiving information on notification.

A11.1.1 Ordinary Inspection

The main purpose of the Ordinary or Routine Inspection is a Conformance Inspection to enable the Engineer 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 Engineer; 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 Engineer. During the formal inspections, the Engineer 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 Engineer to the Contractor to remedy the detected defects. Based on the outcome of the formal inspection, the Engineer will immediately correct any possible errors or misrepresentations in the Contractor's Monthly Statement, countersign it and present it to the Employer 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 Engineer and specified in the Memorandum.

Ordinary (Routine) Inspection (R)

defects to be identified	Inspection Requirements
OM100 Sealed pavement OM200 Shoulder OM300 Drainage OM400 Vegetation OM500 Roadside furniture OM600 Structures OM700 Operational servicing	Routine Inspections are undertaken by the Contractor on a monthly basis, jointly with the Engineer's Surveillance Officer. It involves detailed survey to note: a) all defects that have reached Intervention Criteria b) Programmed work not completed in Response Time 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. The information collected shall be submitted in Form OM-01

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

The minimum inspection requirements are specified below. The Contractor may need to exceed these requirements to ensure they can comply with the overall service level requirements.

Hazard Inspection (H)

Defects to be identified	Minimum Inspection Requirements
OM101 Pothole patching OM102 Regulation of wheel ruts and depressions OM105 Pavement cleaning OM201 Unsealed shoulder	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: a) hazards that impose an immediate danger or compromise safety to the road user and others;

OM203	Embankment and Batter Repairs	b) defects that are of an offensive nature; and c) defects as indicated by Inspection Type “H”
OM301	Surface drainage	<p>When determining if a defect is an immediate safety hazard the Contractor must consider:</p> <p>a) severity and nature of the defect; b) extent of the defect; c) general road condition and prevailing or expected weather conditions d) location of the defect e) effect on the road user f) volume of traffic</p> <p>Inspections at pedestrian underpasses shall be visually undertaken on-foot.</p> <p>The information collected shall be submitted in Form OM-02</p>
OM302	Underground drainage, culverts and underpasses	
OM303	Culvert and pit repair	
OM402	Tree and shrub management	
OM502	Guard stones	

A11.1.3 Bridge and Major Culvert Inspections

The reason for bridge and major culvert inspections is to ensure that the Contractors are undertaking the required care of bridges and major 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 a 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)

Defects to be identified	Minimum Inspection Requirements
OM303Culvert and pit repair	Bridge and Major 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 major culvert structures for all structural defects, superficial damage, batter defects and stream scour.
OM600Structures	The information collected shall be submitted in Form OM-03

A11.1.4 Night Inspection

The reason for Night Inspections is to ensure that when driving at night the road is safe and signs easily visible. It will also provide the Contractor and the Engineer 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)

Defects to be identified	Minimum Inspection Requirements
OM501 Sign maintenance OM503 Guideposts, delineators and painted trees	<p>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”</p> <p>The speed should be kept to a level that allows the condition of the listed assets to be observed clearly</p> <p>The information collected shall be submitted in Form OM-04</p>

A11.1.5 Emergency Inspection,

Following notice by Engineer or the Employer.

Emergency Inspection (E)

Defects to be identified	Minimum Inspection Requirements
OM105 Pavement cleaning OM302 Culvert and pit cleaning and stormwater drains OM303 Culvert and pit repair OM304 Stream maintenance OM600 Structures OM700 Operational Servicing	<p>Emergency Inspections are to be undertaken by the Contractor immediately when notice is given, by the Engineer or Employer including:</p> <ol style="list-style-type: none"> callouts to road safety/traffic emergencies observation of a drainage structure, bridges and surface drains during and after heavy rainfall or floods; observation of safety barriers and road surface is safe after a road accident; and landslip sites <p>The site is to be immediately made safe, an estimate of equipment and materials required for re-establishing (temporarily) the facility, and the KSTP notified.</p> <p>The information collected shall be submitted in Form OM-05</p>

A11.2 Informal Inspections of Service Levels

The Engineer may carry out informal inspections of Service Levels as part of his general mandate given to him by the Employer. He may do so on his own initiative, at anytime 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 Engineer 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 Engineer and/or 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

Management representatives of the Engineer 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 31st December of each year. The formal meetings shall be held on a fortnightly basis during this period.

Prior to the Monthly meeting the Contractor will submit a Monthly 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 Engineer 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 Engineer

- d) Any items not completed from the previous month's program

Where asset items are not repaired within the Response Time period, the Engineer 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
--

ORDINARY MAINTENANCE WORKS – TYPE A ROAD SURFACE RELATED

Monthly Statement for Contract No.

Contract Name:

Contract Month No.: ____

Total length of Road in Contract (Km)

Period: _____ (month)

Length of road excluded (km)

Monthly Payment Type A :

Length of road to meet required service level (km)

Services L/S (Schedule 1 Item 1) _____

(1)

(Rs) (4)

Service Level Criteria	Compliance criteria	Non-compliance		Payment Reduction
		Length non-compliant (2)	% Payment reduction (3)	(5) = (2)/(1)x(3)x(4)
1. Road User Service and Comfort	Potholes Patching		34%	
	Surface Depressions & Ruts		12%	
	Crack Sealing		4 %	
	Surface Treatment		2 %	
	Edge Repairs		18 %	
	Dig out Repairs		28 %	
	Repairs of Concrete Pavement / paver blocks		2%	
			SUB TOTAL (5)	

STANDARD FORMAT FOR PAVED ROADS MONTHLY STATEMENT
--

ORDINARY MAINTENANCE WORKS – TYPE B ROAD ENVIRONMENT RELATED

Monthly Statement for Contract No.

Contract Name:

Contract Month No.: ____

Total length of Road in Contract (Km)

Period: _____ (month)

Length of road excluded (km)

Monthly Payment Type B :

Length of road to meet required service level (km)

Services L/S (Schedule 1 Item 1) _____

(1)

(Rs) (4)

Service Level Criteria	Compliance criteria	Non-compliance		Payment Reduction
		Length non-compliant (2)	% Payment reduction (3)	(5) = (2)/(1)x(3)x(4)
1. Road User Service and Comfort	Pavement Sweeping		4%	
	Unsealed Shoulder Repairs		17%	
	Unsealed Shoulder Power Grading		6%	
	Embankment and Batter repairs		2%	
	Surface drains Cleaning		4 %	
	Pipe, Culverts and Pits Cleaning		9%	
	Pipe, Culvert and Pits Repairs		6 %	
	River/Stream Maintenance		4 %	
	Grass Control, Clearing and Grubbing		5 %	
	Tree and Shrub Management		4 %	
	Sign Maintenance		4 %	
	Guard stone/Guardrail Maintenance		4 %	
Distance Stones, guidepost delineators etc		4 %		

	Footways		2 %	
	Road marking and Cats Eyes		4%	
	Bridge and Major Culvert Maintenance		6 %	
	Minor Landslip clearing		2 %	
	Emergency Works and Services		9 %	
	Vandalism Repair		2 %	
	Litter control & Road obstructions		2 %	
			SUB TOTAL	
			(5)	

PAYMENT DEDUCTION SUMMARY FOR CONTRACT**Payment Summary – Contract No. _____ / _____ for Month of _____ 202_****Road Number (s) _____ Contract month: ___ of ___ (contract period)**

Service Level Criteria	Compliance criteria	Payment Reduction		
		No. incidents/ Days (1)	Payment reduction (2)	Subtotal (3) = (1) x (2)
1. Road User Service and Comfort	Defined in previous table Type A Type B		from previous table (5)	
2. Road Usability	Interruption to traffic		10,000 Rupees per occurrence	
3. Management	Failure to provide Self Control Unit Failure to provide Patrol Maintenance Unit (PMU) Failure to complete and Submit Inspections and reports (Initial/Milestone/Completion/Monthly) Failure to submit Program of performance (contract Plan) Failure to comply to various requirements (quality/environment/Social/Traffic Management /Emergency) (See Cl. C7(iii))		Rs 10,000 per day Rs 10,000/day Rs 5,000/day Rs 5,000/wk Rs 10,000/event	

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 6 months milestone period there shall be no deduction under item 1 (Road User Comfort).

STANDARD REPORTING TABLE FOR COMPLIANCE WITH SERVICE LEVELS

Contract No.: Date of inspection:
 Contractor : Persons present :

**INSPECTION OF SERVICE LEVELS
 FOR THE MONTH OF
202....**

Road	SECTIONS		CRITERIA	
	From	To	Complied with	Not complied with
	<i>[specify]</i>	<i>[specify]</i>	<i>[insert cross "X" or leave empty]</i>	<i>[insert cross "X" or leave empty]</i>

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]*
 *[Signature]*

A13.2 Milestone Reporting Requirements:

A13.2.1 Initial Road Condition Report

Within 30 days of signing the Notice to Proceed with the Works, the Contractors Road Manager shall submit the 'Initial Road Condition Report' to the Engineer. The Report shall consist of the following components:

- Initial Condition Survey
- a Video graphic Survey
- Roughness Results
- Environmental Safety and Social 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 Engineer or their Nominated Representative's shall carry out a joint 'Initial Condition Survey' of the roads and bridges, and shall submit it to the Engineer. Details of the Initial Condition Survey shall be recorded on Form OM 10 as provided at Appendix C.

The Video graphic Survey of all the roads within the Contract is to be completed in accordance with the Terms of Reference for the Video graphic 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 Engineer 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 Engineer the results of the surveys within 21 days, after start date.

The Environmental, Safety and Social 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 Engineer will confirm Initial Condition Survey within 21 days. The Engineer'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 Engineer. 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 Engineer will confirm Milestone Condition Survey within 30 days. The Engineer'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 Engineer. The Report shall consist of the following components:

- Condition Survey
- a Video graphic 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 Engineer will confirm Milestone Condition Survey within 30 days. The Engineer's ruling on the condition of any item feature will be final.

A13.2.4 Milestone 3,4,5 and 6 Reports

Within 30 days of meeting the Completion of years 2, 3, 4 and 5 of the Contract, the Contractors Road Manager shall submit the 'Milestone Road Condition Report' to the Engineer. 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 Engineer will confirm Milestone Condition Survey within 30 days. The Engineer's ruling on the condition of any item feature will be final.

A13.2.5 Milestone 7 (Handover) Report

Prior to 6 months of the Completion of the Contract, the Road Manager and Engineer 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 Engineer 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 and Social Survey through the use of the Contractor's Environmental & Social Checklist as per Appendix-F.1

The Engineer will provide a written record of the Contract Completion Condition Survey to the Contractor within 14 days of the completion of the survey. The Engineer'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 and 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 Engineer as detailed in Clause A13.2.

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

The Contractor shall make available all of the records maintained by the Contractor in relation to The Works for inspection by the Engineer 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 KSTP, PUBLIC WORKS DEPARTMENT 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 KSTP, PUBLIC WORKS DEPARTMENT 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 submitted by the contractor within 4 weeks of the commencement of the agreement. This shall be promptly sighted & commented by the Engineer & agreed by both sides within 8 weeks of the commencement of the contract. If a modified Contract Quality Plan is not presented by the Contractor within 4 weeks, the sample 'Draft Quality Plan', issued with the Bidding Documents (PWD Quality Manual), shall be the approved Contract Quality Plan until other modifications to work practices and responsibilities are presented by the Contractor and approved by the Engineer.

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 IRC SP 112- 'Manual for Quality Control on Roads and Bridges' and 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 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 Engineer or his representative, the regular quality inspections of the contracted network.

The Engineer 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 Engineer in carrying out any document and/or field audits that the Engineer 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 Engineer 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 Engineer 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 VI 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:

- (a) Ensure the systematic identification of existing and new hazards on the work site(s)
- (b) Ensure the minimization of significant hazards, where elimination and isolation are both impractical
- (c) Ensure the provision and use of appropriate protective measures

- (d) Include emergency procedures for dealing with accidental spillage, pollution or imminent danger
- (e) Ensure regular review and assessment of each hazard identified and monitor employees exposure to these hazards
- (f) 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 Engineer.

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 Engineer and any other stakeholders the Engineer 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 Assistant Executive Engineer, Road Maintenance Wing of PWD 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 Engineer. 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 and Social issues defined in Section VI Part H“ Environmental and Social Requirements”.

Section VI, 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

Notwithstanding 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 (5th Revision 2013, 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 (5th Revision 2013, 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/repared 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 Grade 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 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 Engineer 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

(a) Providing Tack Coat with Cationic Bitumen Emulsion

Specification MoRTH clause 503, Tack Coat shall be applied clean and prepared surface with Cationic Bitumen Emulsion @ rate of 0.20 to 0.30 kg per sqm uniformly distributed using hand spray gun or pressure dissipater for areas >100 sqm at one location.

(b & c) Supply and placing DBM & BC

Applicable for areas > 25m²

Specification - MoRTH Clause 505, 507 (Grading 2)

DBM & BC layer with VG 30 BITUMEN shall be used to carry out different areas of pavement repairs. The Asphalt layer may be laid preferably with paver and including compacted to the required density. The percentage weight of Bitumen of total mix is 4 to 4.5% for BM and 5.4% (minimum) for BC.

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 BC bituminous overlay.

(d) Repair of Minor dig outs and Failed Sections

Applicable for areas > 5m²

Specification – Section B3, MoRTH Clause 406, 503, 505,507, 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 30mm BC including tack coat.

e) 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.

(f) Light Surface Sealing

Applicable for areas > 50m² in single isolated area or where exceeds 10% of pavement area in a Hectometre concern.

Specification – as directed by Engineer

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 BC bituminous overlay.

(g) Slurry Seal

Applicable for areas > 50m²

Specification – as directed by Engineer

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 BC bituminous overlay.

(h) Gravel material for roadside repairs -

Specification - MoRTH Clause 401

Construct Gravel shoulders as per MoRTH Specification 401, 406 & 408 for road side repairs as directed by the Engineer-in-charge.

(i) Removal of Land Slip Material/Debris/unsuitable material Applicable for volume > 5m³ at any one location

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

(j) Earth Work Excavation of Soils

MoRTH Specification No. 304

Excavation shall be done as directed by the Engineer

(k) Clearing and Grubbing Scrub/Light Jungle/Heavy Jungle/Juliflora

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

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

(l) VCC of different grades

MoRTH Section No. 1500,1700,2100,2200

Laying of Concrete shall be done as directed by the Engineer

(m) 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

(n) Sign boards, KM stone, HM 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

(o) Thermoplastic road marking –

MoRTH Specification No.803

Providing and applying thermoplastic road marking paint on the pavement surface as directed by Engineer

(p) Refurbishment & Fixing of Sign boards, KM stone, HM stone and Guard /Guide/Boundary pillar and safety barriers

MoRTH Specification (Suggestive) 801, 804 and 806,808,809,810,811,812

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

IRC 119-2015-Guidelines for traffic safety barriers

PERIODICAL MAINTENANCE

(a) Tack Coat

MoRTH Specification No. 503

Applying of tack coat for BC and DBM as directed by Engineer

(b) BC

MoRTH Specification No. 507, Minimum thickness of BC overlay is 30mm. Necessary profile correction may be done to get the required camber and superelevation.

Construction of BC grading-II, with Bitumen VG 30 NRMB of 5.4% total weight, as directed by Engineer

(c) Thermoplastic road marking

MoRTH Specification No.803, IRC 35-2015

Providing and applying thermoplastic road marking paint on the pavement surface as directed by Engineer

(d) Fixing Road Studs

MoRTH Specification (Suggestive) 801, 804 and 806, IRC 35-2015

Providing and fixing of road studs on the road as directed by Engineer

(e) Gravel material for roadside repairs

Specification - MoRTH Clause 407

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

MINOR IMPROVEMENTS

(a) Tack Coat

MoRTH Specification No. 503

Applying of tack coat for BC and DBM as directed by Engineer

(b) Dense Bituminous Macadam

MoRTH Specification No. 505

Construction of DBM, with VG 30 Bitumen of 4% (minimum) total weight, as directed by Engineer

(c) Scarifying the existing Bituminous Surface

MoRTH Specification No. 305.4.3

Scarification shall be done as directed by the Engineer

(d) Construction of Granular Sub-base

MoRTH Specification No. 401

Construction of GSB shall be done as directed by the Engineer

(e) Providing, Laying Wet Mix Macadam

MoRTH Specification No. 406

Laying of WMM shall be done as directed by the Engineer

(f) Dismantling of flexible pavements-Bituminous courses

(g) Dismantling of flexible pavements-Granular courses

(h) Construction of subsurface drain with perforated pipe of 100 mm internal diameter

MoRTH specification 809

(i) Supplying and laying interlocking tile

IRC SP 63-2004 Guideline for the use of interlocking concrete block

(j) Providing and laying of Filter media with granular materials/stone crushed aggregates

clause 2504.2.2. of MoRTH specifications

(k) Laying of BC

MoRTH Specification No. 507

Laying of BC shall be done as directed by the Engineer

(l) VCC and VRCC of different grades

MoRTH Section No. 600,1500,1600,1700,1900,2000,2100,2200,2300,2600, 2700 etc.,

Laying of Concrete shall be done as directed by the Engineer

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 or delegated representative.

(m) Earth Work Excavation of Soils (Item 4.2 & 4.9)

MoRTH Specification No. 304

Excavation shall be done as directed by the Engineer

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 or delegated representative.

(n) Sand Filling (Item 4.10)

MoRTH Specification No. 304

Sand Filling shall be done as directed by the Engineer

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 or delegated representative.

(o) Grouted Pitching (Item 4.19)

MoRTH Specification No. 2504

Grouted Pitching shall be done as directed by the Engineer

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 or delegated representative.

(p) Mastic Pad (Item 4.32.)

Providing mastic pad shall be done as directed by the Engineer

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 or delegated representative.

B5 Amendment to Material Specifications- Nil

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 PWD Maintenance Wing, KSTP and the PWD Engineering staff to undertake any testing required by the Engineer.

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 Engineer or the Contractor shall be carried out in the presence of an authorized representative of the Contractor and the Engineer. 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 Engineer.

e) Test Results

The Contractor shall furnish all test results to the Engineer as a monthly summary or at a frequency directed by the Engineer. The Engineer 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 Engineer prior to implementing any such temporary installations.

On both sides, suitable regulatory / warning signs as approved by the Engineer 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 Engineer, 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 Engineer 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 Government of Kerala. Any new entrance observed by the Contractor, shall be reported to the Engineer 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 Engineer may direct that a private entrance culvert, which has been installed without approval, but otherwise satisfies the Engineer'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 Engineer immediately on such dumping for their necessary corrective action.”

Section VI, Part C

Ordinary Maintenance Specifications

- | | |
|---------------|---|
| Part C | Specifications for Ordinary Maintenance Works |
| 1. | General |
| 2. | Patrol Maintenance Unit |
| 3. | Specification of Service Level Criteria |
| 4. | Specification for Road User Services and Comfort Measures |
| 4.1 | Paved Roads |
| 4.1.1 | Service Level |
| 4.1.2 | Variation & Gradual Appliance |
| 4.1.3 | Procedure for Inspection |
| 4.2 | Signage & Safety |
| 4.2.1 | Service Level |
| 4.2.2 | Variation & Gradual Appliance |
| 4.2.3 | Procedure for Inspection |
| 4.3 | Drainage |
| 4.3.1 | Service Level |
| 4.3.2 | Variation & Gradual Appliance |
| 4.3.3 | Procedure for Inspection |
| 4.4 | Vegetation |
| 4.4.1 | Service Level |
| 4.4.2 | Variation & Gradual Appliance |
| 4.4.3 | Procedure for Inspection |
| 4.5 | Structures |
| 4.5.1 | Service Level |
| 4.5.2 | Variation & Gradual Appliance |
| 4.5.3 | Procedure for Inspection |
| 4.6 | Shoulders & Batter Slope Stability |
| 4.6.1 | Service Level |
| 4.6.2 | Variation & Gradual Appliance |
| 4.6.3 | Procedure for Inspection |
| 4.7 | Operational Servicing |
| 4.7.1 | Service Level |
| 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 7 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 Engineer's approval within 8 weeks of the Start Date and implement all quality management requirements.

It is expressly noted that Ordinary Maintenance commences on day 1 of the contract for all of the road network, however the service levels to be met vary in some locations depending on whether the Initial Rectification Works, Periodic Works or Minor Improvement Works have been completed.

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 Engineer.

(ii) Restoration of road openings

In general, Kerala PWD is responsible to reinstate all service utility road openings undertaken by a Service Authority or its contractors. The Engineer may direct that temporary reinstatement or final restoration is to be carried out by the Contractor considering it as an Emergency Work under Section VI, but the cost shall be met from additional resources and not to be booked from the Provisional sum under Emergency work. The Contractor is to notify the Engineer immediately (within 24hours) when any new road opening is noted.

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

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

C2 (A) Road Management Unit (RMU/SCU)

The Contractor shall establish a Road Management Unit (RMU) that inspects the network to ensure compliance with the service levels. The RMU shall have a twin cab utility vehicle painted and labelled appropriately for safety and public awareness to the Engineer's satisfaction.

Each RMU vehicle shall have a dash cam style video camera that records all travel on the road network. Videos shall be kept by the Contractor for a minimum period of 6months, with videos recorded on the first day of each month provided to the Engineer on suitable medium (portable hard-drive, DVD etc) along with the monthly report. The Engineer may request a copy of any of the prior 6-month videos at any time and these shall be provided within 24hours.

There must be provision kept for online vehicle tracking system (such as GPS device) installed in the PMU vehicle for centralized monitoring of daily run of the vehicle by the road agency/client. The combination of the tracking system and the aforementioned videos is the primary evidence that the Contractor is meeting their requirements in regard to inspecting the road assets.

The RMU vehicle shall be equipped with such equipment as is necessary to safely and efficiently inspect the road network, including as a minimum a straight edge, measuring tape and measuring wheel, GPS enabled camera (can be via phone with location services enabled when taking photos) and protective clothing and traffic safety devices (cones, signs and flashing beacons on roof).

The RMU is responsible for ensuring that the performance of the network is in compliance with the service levels, and shall be staffed with a driver, an Engineer or Road Technician of at least 10year experience, and such other staff as the Contractor deems appropriate. The RMU is responsible for keeping records of compliance against the service levels and being the 'eyes and ears' of the PWD in regard to the issues impacting the performance of the network.

The inspections are:

- i. Routine inspection (patrols) – The RMU shall travel back and forth at least one (1) time per week over the entire length of the road under contract to monitor and record the overall condition of the assets covered by this contract, make daily reports available to the Engineer with a copy thereof provided to the Employer, which shall include, but be not limited to, the following:
 - To observe any defect, damage to pavement, safety elements, signs and other assets to address of any urgent problem such as, for instance, obstruction of road and to report or take other immediate remedial action (either directly or advising the Patrol Maintenance Unit of urgent action).

- To record the situation of previously reported non-compliance for rectification as to whether the repair work had started, was under way or completed.
 - To record and report upon any illegal encroachments and for the monitoring of the maintenance and repair works by the various retained parties.
- ii. Walk Through Inspections: To monitor and check the assets in detail, such as pavement cracking, settlement, erosion, condition of structures and other road related assets covered by this contract. These shall be conducted at least annually.
 - iii. Emergency Conditions: such as flooding, obstructions, natural events.

The level of patrolling shall be adequate to meet the requirements for maintaining proper and contractual service levels mentioned in these specifications. The Engineer may join the RMU on any inspections with 24hrs notice, and the RMU shall ensure there is room in the vehicle for the Engineer.

The inspections of the RMU will be used by the Contractor to report their compliance with the Service Levels as part of the monthly reporting process. These Contractor reported compliance levels will then be audited by the Engineer. A failure to provide a timely and accurate assessment of compliance by the Contractor shall be deemed as a non-compliance with the relevant service levels, but with all relevant penalties doubled.

While it is up to the Contractor as to how they managed their staff, it is expected that there will be a strong line of communication between the RMU and the PMUs, with the RMU identifying works that are required to be completed by the PMU to keep the network in compliance with the service levels at all times.

C2 (B) Patrol Maintenance Unit (PMU)

The Contractor shall provide and run daily, except on Sundays and holidays permitted by the Engineer, 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) painted and labelled appropriately for safety and public awareness to the Engineer's satisfaction. Each PMU vehicle shall have a dashcam style video camera that records all travel on the road network. These videos shall be kept by the contractor for a minimum period of 2 weeks and provided to the Engineer within 24 hours if requested.

There must be provision kept for online vehicle tracking system (such as GPS device) installed in the PMU vehicle for centralized monitoring of daily run of the vehicle by the road agency/client. The contractor shall be responsible to keep such tracking system functional throughout the contract period. The combination of the tracking system and the aforementioned videos is the primary evidence that the Contractor is meeting their requirements in regard to inspecting the road assets.

The number of Patrol Maintenance Units (PMU) may be linked to the package length and the Contractor is to ensure that they have sufficient PMUs to meet all the service level requirements. 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 PMU shall also be the "Initial Emergency Response Unit" and shall have the capability of the following:

- Capable to hold a half a 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, the Engineer and the Employer prior to the Start Date.

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

Service Levels are defined in the following format:

- For defects that can be predicted (noting that the RMU inspects weekly and the PMU daily such that most defects can be observed and rectified before failing the Service Level criteria), there is a maximum quantity of defects that may be present at any time. Failure to meet this standard will give rise to a penalty deduction and no time period is provided for the Contractor to rectify the defect. Secondly, a Time for Repeat Penalties exists,

which is the minimum period upon which the Engineer may recommend to the Client that further penalties are made if the network is still not in compliance.

- For defects that cannot be predicted (e.g. debris dropped on the road), there is a response time upon which the defect must be addressed. Secondly, a Time for Repeat Penalties exists, which is the minimum period upon which the Engineer may recommend to the Client that further penalties are made if the network is still not in compliance.

The RMU shall have such computer systems as necessary to manage compliance and associated reporting.

C4 Specification of Road User Service and Comfort Measures

Standard Job Description	Intervention Criteria	Response Time	
		Inspection**	Repair
OM101 POTHOLE PATCHING Treatment of isolated failed pavement areas in traffic lanes using appropriate materials to repair the defect and restore the riding surface to a smooth condition.	Potholes in traffic lane of a sealed pavement > 0.02 sqm	Hazard (H)	1 day
	Repair all potholes	Routine (R)	1 weeks
OM102 SURFACE DEPRESSION and RUT PATCHING Application of a levelling course of bituminous materials to depressed or rutted areas of pavement	Deformations greater than 70mm under a 1.2 m straight edge	H	2 days
	Deformations greater than 30mm under a 1.2 m straight edge	R	2 weeks
OM103 CRACK SEALING Filling of cracks and joints, excluding "crocodile" cracking, using liquid bituminous sealants in accordance with monthly works program.	All cracks <3 mm width	R	1 weeks
OM104 SURFACE TREATMENT Application of bituminous materials and cover aggregate areas of pavement with: (a) loss of aggregate (surface ravelled); (b) bleeding and flushing; or (c) laminated asphalt surface.	Treat when: (a) stripping/ravelled >30% loss of aggregate for an area >5 m ² (b) bleeding/flushing for an area >5 m ² (c) all "crocodile" cracking (d) delaminated surface >0.25m ²	R	4 weeks
OM105 PAVEMENT SWEEPING Cleaning/sweeping of pavement including at intersections, kerbs and channels to remove all debris which is a undesirable and which prevents the free drainage of the pavement.	When fallen debris, slippery substances, accumulation of granular material, ponding of water or any other obstacle becomes a danger to traffic or pedestrians	H	1 day
	When accumulation of aggregate, dirt or debris prevents the free drainage of the pavement	R	1 week
OM106 EDGE REPAIR Repair of broken edges of seal, to line and level to maintain nominal sealed width.	When break becomes a hazard	H	1 day
	When edge break exceeds 100 mm. laterally over at least a 1 m length from the nominal seal line.	R	4 weeks
OM107 DIGOUT REPAIR Treatment of isolated failed	When break becomes a hazard	H	1 day

pavement areas >0.25m ² by replacement with new material or improvement of existing material, including Reinstatement of road surface.	All failed areas	R	1 week
OM108 REPAIR OF CONCRETE PAVEMENT AND INTERLOCK BLOCKS Repair of isolated damages	All damaged areas	H	1 day
	All damaged areas	R	1 week

Table C4.2.1 Standard Jobs, Intervention Criteria and Response Times for Signage and Road Safety

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection* *	Repair	
OM501 SIGN MAINTENANCE Sign repair, re-erection, support replacement and/or maintenance cleaning	Straighten sign posts when more than 5 degrees off vertical Clean sign and delineator face when reflectivity is reduced due to accumulation of dirt. Repair damage	Routine (R) Night(N)	2 weeks	1 No.
OM502 GUARDSTONES/BOUNDARY STONES/GUARDRAILS Repair, and reinstall damaged/missing guardstones and guardrails barriers	Fallen or damaged at a critical location making them substantially ineffective	R	2 weeks	1 No.
	Other locations	R	4 weeks	
Painting Guard stones, Boundary stones and guardrail	As per agreed Program, with all guard stones boundary stones and guardrails painted at least once every 12 months. Where whitewashing and colour banding is done and 30 months where synthetic enamel painting is done.	R	12/30 months	1 No.
OM503 DISTANCE MARKERS, GUIDEPOSTS, DELINEATORS, and HAZARD MARKERS Cleaning and/or replacement of damaged and missing guideposts, distance marker posts, hazard markers and delineators.	Guideposts/Delineators missing or damaged at a critical location	R, N	1 weeks	1 No.
	(a) functional requirements not met; (b) not visible from 100m at night on low beam	R, N	1 weeks	

<p>Straightening of crooked or bent guideposts</p> <p>Painting, of distance markers, guideposts and hazard markers, including lettering</p>	<p>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.</p>	R	12/30 months	1 No.
<p>OM504 FOOTWAYS</p> <p>Repair or regulation of defective paved areas <0.25 m².</p>	<p>Defective pedestrian areas on islands and footpaths where step-up > 50mm.</p>	R	1 weeks	1 m ²
<p>OM505 ROADMARKING & ROAD STUDS</p> <p>Repair of defective or faded thermoplastic markings and cleaning of all markings (Re-applications will be under Provisional Item).</p>	<p>Thermoplastic marking faded or damaged and functional requirements not met.</p>	R	4 weeks	1 m ²
<p>Maintenance of all/ damaged road studs</p>	<p>Road studs missing, damaged or functional requirements not met.</p>	R	4 weeks	1 No.

Table C4.3.1 Standard Jobs, Intervention Criteria and Response Times for Drainage

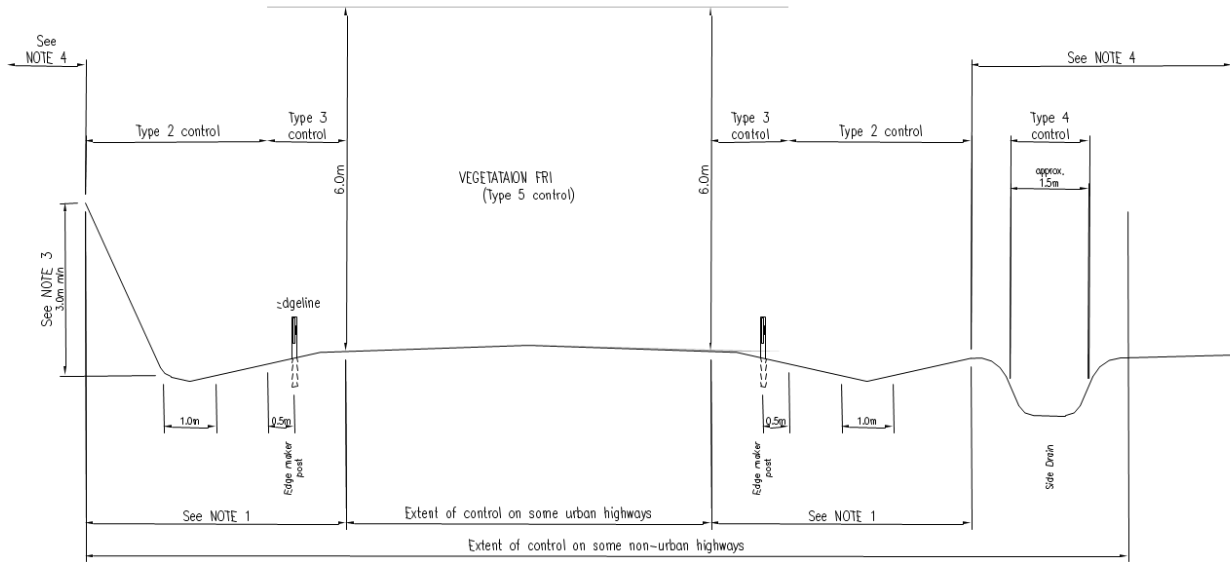
Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection**	Repair	
OM301 SURFACE DRAIN CLEANING Cleaning of channels, including kerb and channel, and reshaping earthen drains, including culvert inlet and outlet drains, to maintain flow of water and protect road and roadside from scour.	When there is, or is likely to be restriction or ponding of water or scouring	Routine (R)	1 week	1 lineal m
OM302 CULVERT and PIT CLEANING Cleaning of Barrel/Vent, culverts, pits and storm water drains to maintain flow of water.	When debris blocks > 20% of culvert area and inhibits free flow.	R	1 week	1 No. (pit/culvert)
OM303 CULVERT and PIT REPAIR Repair or replacement of damaged pipes, culverts, pits, surrounds, grates, lids or lintels and headwalls.	Damaged or missing drainage pit lids, surrounds, grates, in pedestrian areas or traffic lanes	Hazard (H)	2 days	1 No. (pit/culvert)
Whitewashing of exposed concrete/masonry to be carried out as required.	When deterioration of pipe, culvert or pit >10% or structure is in precarious condition	R	2 weeks	
OM304 RIVER and STREAM MAINTENANCE Maintenance and cleaning of debris from streams within 10 m of structure and repair minor scours.	Any log debris >150 mm in diameter. Any accumulation of debris >400 mm in dimension.	R	1 week	1 No. of Sites

Table C4.4.1 Standard Jobs, Intervention Criteria and Response Times

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection**	Repair	
<p>OM401 Clearing and Grubbing</p> <p>Mowing/slashing of roadside areas, maintain sight distance, reduce fire hazard and maintain a tidy appearance at:</p> <p>(a) Medians and traffic islands</p> <p>(b) Road intersections – maintain minimum sight distance to 30 m in advance of all road approaches and departures and any other nominated area.</p> <p>(c) Safety signs, kilometre posts, guard stones and other roadside furniture – slash to ensure full vision.</p>	<p>Maintain grass height to an average maximum 400 mm.</p>	<p>Routine (R)</p>	<p>6 weeks</p>	<p>1 sqm</p>
<p>OM402 TREE and SHRUB MANAGEMENT</p> <p>Maintenance of roadside areas, including brush cutting, foliage trimming and removal of vegetation.</p>	<p>Tree limbs or trees that are in immediate danger of falling and causing a danger to the public</p>	<p>H</p>	<p>1 day</p>	<p>1 No. of Sites</p>
	<p>Trees and shrubs which restrict intersection sight distance or obscure safety signs</p>	<p>R</p>	<p>4 weeks</p>	
	<p>New tree and shrub growth within drains, clear zones, the shoulder and verge.</p> <p>Trim trees to maintain:</p> <ul style="list-style-type: none"> -minimum 1 metre from back edge of shoulder and/or kerb; -minimum 5 metre height clearance over pavements. 	<p>R</p>	<p>8 weeks</p>	

Diagram 4.2 – Extent of Vegetation Control Requirements

EXTENT AND TYPE OF VEGETATION CONTROL



NOTE 1 this distance must be a minimum of 3.0m on straights and on the outside of curves and a minimum of 5.0m on the inside of curves.

NOTE 2 Vegetation free zone must be maintained free of all vegetation.

NOTE 3 A minimum of 3m to be maintained on the cuts up, and 2m on slope down.

NOTE 4 These areas must be maintained according to the local requirements

Table C4.5.1 Standard Jobs, Intervention Criteria and Response Times for Structure

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM600STRUCTURES				
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.	Routine (R)	8 weeks	1 No. of Sites
	Minor work on structural components and other repairs, protection of exposed surfaces	Bridge and Major (B)	8 weeks	1 No. of Sites
Where previously painted, paint railings and parapets.	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

Table C4.6.1 Standard Jobs, Intervention Criteria and Response Times for Shoulders and Embankments

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection **	Repair	
OM201 UNSEALED SHOULDER REPAIR Spot filling, grading and reshaping of unsealed shoulders, up to 25m length per location, to correct: (a) drop off from edge of seal to shoulder; (b) roughness, scouring or potholes; (c) holding of water.	Edge drop off onto unsealed shoulder greater than 100 mm. deep	Hazard (H)	1 day	1 shoulder km
	Edge drop off onto unsealed shoulder greater than 50 mm.	Routine (R)	8 weeks	
	When potholes or scouring > 70 mm depth measured with a 1.2 m straightedge, or when there is significant holding of water	R	2 weeks	
OM202 UNSEALED Road repair Repair to the unsealed road, to correct spot shoulder, rutting, erosion etc.	When pothole or scouring >50 mm depth when measured with a 1.2 m straight edge	R	2 weeks	1 shoulder km
OM203 EMBANKMENT AND BATTER REPAIRS Repair of isolated embankment and batter damage, including from scouring, washouts, erosion.	When embankment or batter damage becomes a hazard	H	1 day	No. of Sites

9.2.5

Table C4.7.1 Standard Jobs, Intervention Criteria and Response Times for operational Servicing

Standard Job Description	Intervention Criteria	Response Time		Unit of Work
		Inspection* *	Repair	
OM701 LAND SLIP CLEARING All work associated with the removal of all material from the road pavement and table drain up to and including the first 5m ³ of rock and/or earth slips from the road and table drain including the disposal of the material at a suitable dump site	When event is detected or made known	Emergency (E)	Same day	1 m ³
OM702 EMERGENCY WORKS AND SERVICES 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.	When event is detected or made known.	E	Same day	1 No. (incident)
OM703 VANDALISM REPAIR Repair or reinstatement of isolated minor damage of <5 m ² caused by vandalism, including all graffiti.	When vandal damage or graffiti is a hazard or objectionable to the public	Hazard (H)	Same day	1 No of Sites
	Other areas of damage and graffiti	Routine (R)	2 weeks	
OM704 ROAD OBSTRUCTIONS and DEAD ANIMALS Collection and removal of obstructions on the road of dimension > 300mm and all carcasses from within the road reserve.	Any carcass or when an obstruction on the road becomes a traffic, safety or health hazard or is visually upsetting	H	Same day	1 No.

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

Event	Service Level
	Time after each event
Road accidents	4 hours after release from police

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 VI. 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 Deletion 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 Engineer.

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 Engineer, the Contractor's responsibilities will be categorised either as Type A, B as described below:

Type	OM Code	OM Description
Type A	OM 101	Pothole Patching
	OM 102	Surface Depression & Rut Patching
	OM 103	Crack Sealing
	OM 104	Surface Treatment
	OM 106	Edge Repair
	OM 107	Digout Repair

Type B	OM 108	Repair of Concrete Pavement
	OM 105	Pavement Sweeping
	OM 201	Unsealed Shoulder Repair
	OM 202	Power Grading of Unsealed Shoulder
	OM 203	Embankment and Batter Repairs
	OM 301	Surface Drain Cleaning
	OM 302	Pipe, Culvert and Pit Cleaning
	OM 303	Pipe, Culvert and Pit Repair
	OM 304	River and Stream Maintenance
	OM 401	Grass Control
	OM 402	Tree and Shrub Management
	OM 501	Sign Maintenance
	OM 502	Guardstones/Boundary Stones/Guardrail
	OM 503	Distance Markers, Guideposts, Delineators and Hazard Markers
	OM 504	Footways
	OM 505	Road markings and Cats Eyes
	OM 601	Bridge and Major Culvert Maintenance
	OM 701	Land Slip Clearing
	OM 702	Emergency Works and Services
	OM 703	Vandalism Repair
OM 704	Road Obstruction and Dead Animal Removal	

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 any PM & MI works which have been let by the Employer within a road section to other contractors for a specific period of time. In this 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 any PM & MI works let by the Employer within a road section which have been completed and are within the defects liability period. In this case, from the time of completion and up to the end of the defects liability period of the major works contract, the Contractor will carryout OM responsibilities for Type B items only as listed above on the applicable section of road.
- (c) Major works contracts any 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 this 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 Engineer in charge

- (e) 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 this case the contractor is however required to carryout 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) 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 this 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 Engineer in accordance with the rates quoted separately for Type A and Type B works in Schedule 1, minus deductions if any for non compliance of activities as determined by the Engineer.

Note: 1. The portion of the Lump Sum price applicable to General Provisions (Item 2 in Schedule 1) shall not be subject to any adjustment under this Clause.

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, accepted by the Engineer adjusted by any additions or deductions made under the Contract.

Payment shall be made in equal monthly instalments. Price Adjustment will be as per Clause 48 of Particular Conditions. 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 Engineer'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 Engineer 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 Engineer 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 Engineer, 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 noncompliance 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 Manger 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 Engineer 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 Engineer 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 Engineer 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 Engineer 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 Engineer 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.

In case the main carriageway is of cement concrete pavement or interlock paver blocks, for the purpose of deduction, activities OM 101 and OM 108 will be clubbed together and combined weightage will be taken.

(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 Engineer 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 Engineer 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 Engineer’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:

= OM Monthly Lump Sum Bid for Type A (Schedule 1 Item 1) x% (percentage applicable for potholes) x $\frac{5\text{km}}{100\text{km}}$ (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.

Payment deduction for incomplete Job Activities

Type	OM Code	OM Description	Unit	Weighted value %
Type A	OM 101	Pothole Patching	Km	34
	OM 102	Surface Depression & Rut Patching	Km	12
	OM 103	Crack Sealing	Km	4
	OM 104	Surface Treatment	Km	2
	OM 106	Edge Repair	Km	18
	OM 107	Digout Repair	Km	28
	OM 108	Repair of Concrete Pavement/interlocking concrete block	Km	2
		TOTAL for TYPE A		
Type B	OM 105	Pavement Sweeping	Km	4
	OM 201	Unsealed Shoulder Repair	Km	17
	OM 202	Power Grading of Unsealed	Km	6
	OM 203	Embankment and Batter Repairs	Km	2

OM 301	Surface Drain Cleaning	Km	4
OM 302	Pipe, Culvert and Pit Cleaning	Km	9
OM 303	Pipe, Culvert and Pit Repair		6
OM 304	River and Stream Maintenance		4
OM 401	Grass Control		5
OM 402	Tree and Shrub Management		4
OM 501	Sign Maintenance		4
OM 502	Guardstones/Boundary		4
OM 503	Distance Markers, Guideposts, Delineators and Hazard Markers		4
OM 504	Footways		2
OM 505	Roadmarkings and Cats Eyes		4
OM 601	Bridge and Major Culvert		6
OM 701	Land Slip Clearing		2
OM 702	Emergency Works and Services		9
OM 703	Vandalism Repair		2
OM 704	Road Obstruction and Dead		2
	TOTAL for Type B		100

- (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

Interruption of motorized traffic (light and/or heavy vehicles) anywhere along a new road or road section. Excluding exemptions.

UNIT RATES FOR NON-COMPLIANCE

10000 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 Road Management Unit (RMU) resources

Further to Clause C2, where the Contractor fails to provide a fully operational RMU, the Engineer will apply the following monthly deduction:

Full day - Rs 10,000/- or Rs 1000/- per hour if it is not a full day.

Failure to provide minimum Patrol Maintenance Unit (PMU) resources

Further to Clause C2, where the Contractor fails to provide a fully operational PMU, the Engineer will apply the following monthly deduction:

Full day - Rs 10,000/- or Rs 1000/- 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 5000/-

- (c) Failure to submit the Program of Performance (Contract Plan) in accordance with Clause A15 of the Technical Specifications

weekly penalty of Rs 5,000 shall apply until the Plan is presented.

- (d) Failure to comply with Contract requirements (Quality, Environmental, Social, Traffic Management, Emergency Response, etc.)

Penalty of Rs 10,000 shall apply for each occurrence.

Compliance to environmental and social approvals as detailed in Section H Table H1 is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labour 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 VI, 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 **the 9month Milestone**, 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 DBM, BC 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/Debris/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, hectometre 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 Engineer 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 Employers 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. The bidder need to conduct detailed study and work out costing based on detailed study before bidding. 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 9 months of start date.

Sl.No	Item	Quantity	Unit
1	Clearing Vegetation -from shoulder median and footpath	27.35	Hectare
2	Maintenance of earthen shoulder	2710.8	sq.m
3	Fog Seal	19304.44	sq.m
4	Slurry Seal-Type II	20034	sq.m
5	Dismantling Cracked area/Minor Dig out/deep pothole	478	sq.m
6	Slurry Seal at Ravelled Portion-Type III	211.4	sq.m
7	Repair of pothole	18.44	sq.m
8	Repair of Edge Damage	785.21	m
9	Dismantling hard shoulder (paved) (bituminous and granular) and constructing CC shoulder (150mm GSB, 150mm M15 and 75mm M20)	259.4	sqm
10	Dismantling damaged CC shoulder for 75mm and providing M20	2.85	cum
11	Providing Cement Concrete Shoulder (150mm GSB, 150mm M15 and 75mm M20)	196	sqm
12	Footpath proposed (60mm block over 30mm sand bed underlied by 200mm WMM)	0.477	sqm
13	Dismantling tiles on footpath	126.3	cum
14	Laying Paver Block Laying 60mm thick at dismantled and new proposed areas	1263.477	sq.m
15	Repair of footpath by relaying	18.942	sq.m
16	Construct median	103.7625	cu.m
17	Dismantle kerb stone	570.1	m
18	Construct kerb	570.1	m
19	Repair of damaged hand rail	(10% repair 90% replacement) 29	m
20	Providing GI Handrail	437	m
21	Cleaning of culverts	658.45	cu.m
22	RR masonry for parapet wall of culverts, wing wall abutment repair	20.637	cu.m
23	Repair of RCC Railing	334	m
24	RCC Parapet-dismantle and reconstruct	1.152	cum
25	RCC Parapet-new proposal	9.719	cum

26	Painting on concrete surface-RCC parapet wall constructed	197.109	sqm
27	Painting on concrete surface-RCC parapet wall existing	48.4	sqm
28	RCC railing M-30	84.8	m
29	Providing crash barrier	380	m
30	Replacing Crash Barrier	42	m
31	Guard stone for Retaining Wall	36	each
32	Providing new sign board-Triangle	98	each
33	Providing new sign board- Rectangle Chevron	57	each
34	Providing new sign board-OHM	143	each
35	Providing new sign board- Rectangle	21	each
36	Providing new dilineator post	609	each
37	Providing new sign board-circular	4	each
38	Refurbishment of sign board		
	Rectangle	24	each
	Triangle	15	each
	Circular	2	each
39	Repair of Sign Board		
	Caution	4	each
40	Replacement of Signboard		
	Rectangle	5	each
	Triangle	5	each

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 VI, 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 9(Nine) months 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 Engineer up to the limit of the Lump Sum in the Contractors Bid. Where requested by the Engineer, 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 VI, 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 (BC 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 (BC overlay). Within the **first six 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 VI 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 30mm BC wearing course for the Structural Overlay sections defined in Section IV Part F Minor Improvement Work. The wearing course activity shall be paid on a unit 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 Engineer 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 crossfall of 2.5% or the required superelevation 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 6 years of the Contract period. The work shall be divided throughout this time period and for no single year, the periodic quantity shall exceed 20% 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 Asphalt Wearing Course anticipated for each year of the Periodic Maintenance

.

Year	Length of road in km.
1	20.764
2	16.809
3	16.597
4	17.24
5	17.8
6	17.897
Total	107.107

Further, **to assist the Contractor**, a list of Year 1 to 6 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 Bitumen 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 30mm BC wearing course for the Structural Overlay sections defined in Section IV Part F Minor Improvement Work. Payment for portion of tack coat and BC included in Minor Improvement work shall be paid under MI works. The entire paved area need to be surfaced at least once within the period of 6 years from the date of commencement.

Periodic Maintenance for I Year				
Road Name	Chainage		L in km	Lane configuration
Chengannur –Angamaly	189/000	205/624	16.624	Two lane with Paved shoulder
Mavelikkara-Chengannur-Kozhencherry	10/000	13/240	3.240	
Minor Improvement Portion			0.9	
Total Length			19.864	
Periodic Maintenance for II Year				
Chengannur -Angamaly	207/555	209/650	2.095	Two lane with Paved shoulder
	210/000	210/205	0.205	
	210/305	213/040	2.735	
	213/140	216/940	3.800	
	217/040	222/000	4.960	
Mavelikkara-Chengannur-Kozhencherry	6/986	10/000	3.014	
Total Length			16.809	

Periodic Maintenance for III Year				
Chengannur -Angamaly	222/000	236/000	13.207	Two lane with Paved shoulder
Mavelikkara-Chengannur-Kozhencherry	16/980	20/500	3.390	
Total Length			16.597	
Periodic Maintenance for IV Year				
Chengannur -Angamaly	151/500	165/000	13.5	Two lane with Paved shoulder
Mavelikkara-Chengannur-Kozhencherry	13/240	16/980	3.74	
Total Length			17.24	
Periodic Maintenance for V Year				
Chengannur -Angamaly	165/000	179/000	14	Two lane with Paved shoulder
Mavelikkara-Chengannur-Kozhencherry	24/500	28/300	3.8	
Total Length			17.8	
Periodic Maintenance for VI Year				
Chengannur -Angamaly	179/000	189/000	10	Two lane with Paved shoulder
	236/000	240/000	4	
Mavelikkara-Chengannur-Kozhencherry	20/500	21/650	1.15	
	21/68	22/964	1.284	
	22/977	23/124	0.147	
	23/144	23/674	0.53	
	23/694	23/814	0.12	
	23/834	24/500	0.666	
Total Length			18.797	

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 sensor based equipment.

E4 Service Levels

The Contractor is responsible for ensuring that the road roughness is below the threshold values given in the table below:

Item	Service Level	Measurement/Detection	Time allowed for repairs or tolerance permitted
Maximum IRI for any one-km section of existing pavement	Average value for any one-km road section must be less than the threshold value given below (in IRI average) 3000 IRI	Measured with calibrated equipment (Bump Integrator or equivalent sensor based equipment as per IRC 16-2019).	No tolerance allowed.
Average Pavement roughness for entire road	Average value for entire road or road section must be less than the threshold value given below (in IRI average) 2800 IRI	Measured with calibrated equipment (Bump Integrator or equivalent sensor based equipment).	No tolerance allowed.
Maximum IRI for any length of a pavement upon receiving periodical renewal	Average value for any one-km road section must be less than the threshold value given below (in IRI average) 2000 IRI	Measured with calibrated equipment (Bump Integrator or equivalent sensor based equipment).	No tolerance allowed.
Maximum IRI for any one-km section of existing pavement Completion report (exit criteria)	Average value for any one-km road section must be less than the threshold value given below (in IRI average) 3000 IRI	Measured with calibrated equipment (Bump Integrator or equivalent sensor based equipment).	No tolerance allowed.

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 Engineer 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 Engineer may however grant a longer period if, in the

opinion of the Engineer, 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 7 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 30 mm BC 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 Engineer or pay Liquidated Damages as detailed in Clause 40.3 of the Particular Conditions.

Section VI, 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 Profile correction, Widening of slab culverts, Reconstruction of Pipe culverts and Bridges.

F2 Description of Minor Improvement Works

The contractor will have to carry out the following Minor Improvement Works:

No	Item	L	B	District	Location
1	Structural Overlay-50mm DBM and 40mm BC	305	11.7	Ernakulam	Ernakulam-210/000 to 210/305, 213/040 to 213/140, 216/940 to 217/040, 232/140 to 232/740
		100	11.8		
		100	13		
		600	9.69		
2	Construction of Subsurface Drain	10.20	35	Kottayam	156/200
		10.50	50		185/800
		10.30	30	Ernakulam	200/200
3	Construction of RR Retaining Wall	50	3	Ernakulam	Maradi East. near water Authority pump house. Kokkappally side shoulder and retaining wall has been washed away recently
		35	3		at approach of Kalady bridge
		160	1.5	Alappuzha	9.726 to 9.776- 50mx1.5m
		26	0.5		9.726 to 9.756-30mx1.5m 10.533 to 10.593-60mx1.5m 11.350 to 11.376-26mx0.5m 13.416 to 13.436-20mx1.5m
4	Construction of RCC slab	3823.7		Ernakulam	Drains are almost covered at all junctions / towns etc. the proposals in Vol II are made for covering all drains. The proposed

					quantity can be reduced to 10%
		2050		Alappuzha	2050m from 7/000 to 19/925
		1300		Pathanamthitta	1300m from 19/9250 to 28/300
5	Construction of CC Drain	358		Alappuzha	10.136 to 10.386 and 10.608 to 10.716 inner width 0.6m, side wall 0.2m thick and 0.8m deep
		400		Pathanamthitta	21.000 to 21.400, side wall 0.2m thick and 1m deep
6	Laying Interlock block in shoulder	400	1.5	Pathanamthitta	23/200 to 23/600-400mx1.5m- Vilakkumadam junction water logged area 25/185 -20mx1m
7	Relaying existing interlocking block in carriage way	103	6.5	Pathanamthitta	21/650-21/680 22/964-22/977 23/124-23/144 23/674-23/694 23/814-23/834 Total L=103m: width= 6.5m

The quantities for the above Minor Improvement Works are detailed as below and shall be used for conformity for assessing the bid..

Indicative Quantity for Minor Improvement Works

MoRTH Item No.	Description of Item	Quantity	unit
YEAR I Work			
3.15	Scarifying the existing bituminous road surface	11862.50	sqm
5.2.a	Providing and applying tack coat with bitumen emulsion(RS)	23725.00	sqm
5.4.2a	Dense Graded Bituminous Macadam:- For Grading II (26.5 mm nominal size) with 80-100 TPH HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with a bituminous binder (VG 30) @ 4.0 to 4.5 percent by weight of total 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. 505 complete in all respects.	593.13	cum

5.6.2.a.1	Providing and laying bituminous concrete with 80-100 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with a bituminous binder(NRMB) @ 5.4 percent of mix and filler with Anti stripping additive material 1.0 kg per 1 tonne of bitumen, 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. 507 complete in all respects Grading - II (13.2 mm Nominal Size)	474.50	cum
2.5.1.A	Dismantling of flexible pavements-Bituminous courses	136.97	cum
2.5.1.B	Dismantling of flexible pavements-Granular courses	779.40	cum
4.1.B.1	Construction of granular sub-base Grading-V - For sub-base cum drainage layer - Mix in Place Method	433.00	cum
4.12	Providing, laying, spreading and compacting graded stone aggregate to Wet Mix Macadam	553.00	cum
12.8.F.1.1	PCC Grade M30 - Using Concrete Mixer	18.40	cum
3.27	Construction of subsurface drain with perforated pipe of 100 mm internal diameter	1732.00	m
	Based on MoRTH Data 55.23 - Supplying and laying interlocking tile 80 mm or nearest available size thick (premium),of grade M30, including providing a layer of coarse sand 5 cm thick, then laying interlock cobbles in lines and levels as per the direction of departmental officers at site including all cost, conveyance, labour charge etc. complete.	1191.00	sqm
	As per 55 OD MoRTH and 6.7.1 MORD - Supplying and laying paving block 60mm thickness of minimum strength M30 and technical specification as per IRC SP 63- 2004 including providing sand bed of compacted thickness 30mm , including all cost and conveyance charges etc complete excluding edge block.	600.00	sqm
Year II Work			
3.13.1.B	Earth work in excavation of foundation	1172.00	cum
12.4	Plain cement concrete 1:3:6 nominal mix in foundation with crushed stone aggregate	162.56	cum
13.4.A	Random Rubble Stone masonry (coursed/uncoursed) work in cement mortar 1:3 for sub structure	829.64	cum
13.8	Providing weep holes	416.00	no

13.10	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications	163.23	cum
12.8.A.1	PCC Grade M15	303.36	cum
12.8.1.C.1	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications RCC Grade M20 - Using Concrete Mixer	22.63	
12.40	Supply, Fitting and Placing un-coated HYSD bar Reinforcement in Foundation complete as per Drawing and Technical Specifications	1.36	MT
13.5.E.P.1	Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications RCC Grade M20 -	1076.06	cum
13.60	Supplying, fitting and placing HYSD bar reinforcement in sub-structure	64.56	MT
55.25	Lifting, conveying and fixing the newly casted RCC covering slabs of any thickness on top of drain in position including all labour charges and miscellaneous expenses etc complete	1076.06	cum
16.83 (DAR)	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	669.50	sqm
16.84(DAR)	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost.)	669.50	sqm

Where requested by the Engineer, 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 asphaltic 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 Engineer 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 Engineer, 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 with granular material 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 Engineer 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.

DBM and BC items:**a) Thickness:**

The minimum thickness shall not be less than 40 mm for BC, 50 mm for DBM 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 or equivalent sensor based equipment 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 undertake the survey under the supervision of the Engineer.

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 overlaid 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

Item	Service Level	Measurement/Detection	Time allowed for repairs or tolerance permitted
Maximum IRI for any length of pavement under Minor Improvement	Average value for any one-km road section must be less than the threshold value given below (in IRI average) 2000 IRI	Measured with calibrated equipment (Bump Integrator or equivalent sensor based equipment).	No tolerance allowed.

On completion of the Minor Improvement Works and 1st year Periodic Maintenance Works defined in Section VI 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 Engineer 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 Engineer may however grant a longer period if, in the opinion of the Engineer, 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 Engineer or pay Liquidated Damages as detailed in Clause 40.3 of the Particular Conditions.

Section VI, Part G Specifications for Emergency Works

List of Contents

Part G Specifications for Emergency Works

1. Definition of “Unforeseen Natural Phenomena”
2. Procedure for requesting Emergency Works
3. Remuneration of Emergency Works
4. Provision for Emergency Works
5. Obligations of Contractor during Emergencies and Emergency Works
6. Minor repairs made necessary by “Unforeseen Natural Phenomena”

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 m³) 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.
- (iv) 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.
- (v) Restoration works due to handling of all Utility service lines, payment for which shall be from other external source of fund. But all other terms and condition pertaining to this specification shall prevail.
- (vi) Expenditure towards Eviction of encroachments and unauthorized occupation, if any.
- (vii) 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 Engineer to carry out Emergency Works designed specifically to remedy those damages. If the Contractor decides to make a request for Emergency Works either on his own or at the request of the Engineer, he must (i) immediately inform the Engineer 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 Engineer, 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 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 Engineer. 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 Engineer’s Surveillance Officer’s 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 Engineer 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 Engineer 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 Engineer is not needed and the Contractor will simply carry out the works on his own initiative. He will nevertheless inform the Engineer of the damages occurred and the remedial measures taken.

The threshold values for minor repairs are as shown in the table below:

Activity	Unit	Threshold Quantity per emergency event
Slides of material onto road	m ³	50
Culverts	Number	1
Asphalt concrete	m ³	20
Base course	m ³	50
Concrete	m ³	5
Embankment	m ³	50

Section VI -Part H

Environmental and Social Requirement

List of Contents

Part	H	Environmental and Social 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.	Labour
	21.	Workers Accident Risks
	22.	Reinstate the Land
	23.	Contractors Checklist
	24.	Legislative Permits/Approvals

The “**Environmental and Social Management Framework**” (ESMF) has been prepared for Contracts under KSTP-OPBRC. Part H is to be read in conjunction with the **ESMF**, 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 Engineer (referred as the PIU/PMU in the ESMF) and serves as basis for complying with safeguard measures to be implemented by the Contractor and monitored by the Engineer. The Environmental Management Action Plan (EMAP) of ESMF 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 Engineer.

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 ESMF 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 Engineer.

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 Engineer. 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
- Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and amendments of 1994, 2000 and 2002
- Hazardous Waste (Management and Handling) Rules
- The Ancient Monuments and Archaeological Sites & Remains Act, 1958 and the Kerala Ancient and Historical Monuments and Archaeological Sites & Remains Act, 1960, and as amended
- The Wildlife (Protection) Act, 1972, and as amended
- Forest Conservation Act, 1980, and as amended
- The Coastal Regulation Zone Notifications, 19.2.1991 and amendments
- 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 Engineer 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 Engineer 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 ESMF 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 Engineer 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 Engineer 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 Engineer'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 Kerala PCB to the Engineer. Location of construction plant shall be from 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 Engineer. 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 *kutch* (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 ESMF;
- 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 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 Engineer 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 Engineer. 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 Engineer, 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 Engineer)
- 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/kutchu/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 asphaltic 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 Engineer. To avoid disruption/disturbance to other water users, the contractor shall extract water from fixed locations and obtain approval from the Engineer 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 Engineer 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 Engineer 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 hotmix 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 Engineer 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 Engineer. 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 conform to relevant dust emissions control as shall be stipulated as per KSPCB'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 Engineer.

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 Engineer.

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 Engineer.
- (b) The Engineer shall approve such felling, only when the Engineer 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 Engineer 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. The First Aid office should also distribute condoms at regular intervals to labourers.

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 Sal volatile
- 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 Engineer 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 Engineer. Work shall be suspended until further orders from the Engineer. The State Archaeological Department shall be intimated of the chance find and the Engineer shall 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 Engineer of such discovery and carry out the instructions for dealing with the same by the Engineer, waiting while all work shall be stopped.

The Engineer 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 Engineer, 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 Engineer, 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 Engineer.

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 Engineer.

Where directed by the Engineer, 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 Engineer.

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 Engineer. **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 Engineer.

All material removed away from the maintenance corridor shall be disposed of in a manner and location as approved by the Engineer.No-objection Certificate (NOC) from land owner / Revenue authorities, as may be applicable, shall be obtained and submitted to Engineer.

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 Engineer. If any existing encroachment prevents the Contractor completing work at a particular location, the Contractor shall notify the Engineer 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 Engineer, 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.
- Wages may be paid to the labourers in the presence of Engineer staff;
- 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 Engineer.
- **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 Engineer.

H22. Reinstate the land

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 as per relevant Specification and as directed by the Engineer. All debris and contaminated materials shall be disposed off from site as approved by the Engineer.

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 ESMF requirement. This checklist shall serve as the basis for implementing safeguard measures by the Contractor and monitoring the same by the Engineer.

H24. Legislative Permits/Approvals

Compliance to environmental and social approvals as detailed below is required when the Contractor establishes a new HMP/WMM Plant, Batching Plant, Crusher, Camp Site, Labour 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

S.N o.	Environmental Parameter	Specification
1	Explosives	Authorization from Explosive's Directorate for storage and handling
2	Extraction of Ground and/or Surface water from new unexplored locations	Approval/authorization under Kerala Water, Land and Trees Act, 2002 and/or competent authority
3	Quarry Operations including stone, aggregates, and sand	Quarry lease from Mines & Geology Department for as per Kerala (Mineral Rights) Tax Act, 1975, if new quarries are expected to be opened

S.N o.	Environmental Parameter	Specification
4	Hot Mix Plant (New)	Consent to Establish and Operate (CFE and CFO) for HMP
5	Wet Mix Macadam (New)	Consent to Establish and Operate (CFE and CFO) for WMM plant
6	Batching Plant (New)	Consent to Establish and Operate (CFE and CFO) for Batching plants
7	Crushers (New)	Consent to Establish and Operate (CFE and CFO) for crushers
8	Vehicular Emissions	PUC from PCB and FC (for vehicles > 15 yrs.) from RTO
9	Camp sites/Labour Camp (New)	<ul style="list-style-type: none"> • Permit from land owner and/or local authorities/revenue department • Authorization from labour commissioner
10	Borrow Areas (New)	Authorization from Mines & Geology Department for as per Kerala(Mineral Rights) Tax Act, 1975, and/or local authorities/revenue dept. if new borrow areas are expected to be opened

Note: For new sources, the Contractor shall provide a copy of evidence of compliance of this requirement to the Engineer. 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 VII

GENERAL CONDITIONS (GC)

Section -VII
General Conditions (GC)
Table of Clauses

A. Contract and Interpretation	
1. Definitions	
2. Interpretation	
3. Documents Forming the Contract	
4. Language and Law.....	
5. Notices	
6. Settlement of Disputes (Alternative when using a Dispute Review Board).....	
6. Settlement of Disputes (Alternative when using a Dispute Review Expert).....	
B. Assignment of Responsibilities	
7. Scope of Works and Services	
8. Design Responsibility.....	
9. Copyright.....	
10. Start Date and Completion	
11. Contractor’s Responsibilities.....	
12. Subcontracting.....	
13. Assignment of Contract.....	
14. Employer’s Responsibilities.....	
15. Confidential Information	
C. Execution of Works and Services.....	
16. Representatives.....	
17. Work Program	
18. Execution of Works.....	
19. Staff and Labour	
20. Test and Inspection.....	
21. Initial Rectification and Periodic Maintenance Works	
22. Minor Improvement Works.....	
23. Ordinary Maintenance Services.....	
24. Performance Standards.....	
25. Contractor’s Self-Control of Quality and Safety.....	
26. Environmental and Safety Requirements	
27. Work Orders for Minor Improvement Works and Emergency Works.....	
28. Taking Over Procedures	
29. Emergency Works	
30. Quality of materials used by Contractor.....	
31. Signalling and demarcation of work zones and bypasses.....	
D. Allocation of Risks.....	
32. Employer’s Risks.....	

33. Contractor’s Risks
 34. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification.....
 35. Insurance.....
 36. Unforeseen Conditions
 37. Change in Laws and Regulations
 38. Force Majeure.....

E. Guarantees and Liabilities
 39. Completion Time Guarantee and Liability
 40. Performance Guarantee and Liability.....
 41. Defect Liability.....
 42. Limitation of Liability
 43. Liability for Damages through Traffic Accidents and Traffic Interruptions.....

F. Payment.....
 44. Contract Price
 45. Advance Payment
 46. Schedule of Prices
 47. Measurement
 48. Price Adjustments.....
 49. Monthly Statements and Payments.....
 50. Payments.....
 51. Retention and Reductions.....
 52. Taxes and Duties
 53. Securities
 54. Certificate of Completion
 55. Final Statement.....
 56. Discharge
 57. As Built Drawings and Manuals.....

G. Remedies.....
 58. Suspension
 59. Termination

H. Provisional Sum.....
 60. Provisional Sum.....
 61. Use of Provisional Sum for Emergency Works.....
 62. Use of Provisional Sum for Contingencies

I. Change in Contract Elements
 63. Change in Assignments to Contractor
 64. Extension Time for Completion
 65. Release from Performance.....
66. Inspection and Audits.....
67. Corrupt or Fraudulent Practices
272

1. Definitions

A. CONTRACT AND INTERPRETATION

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 Engineer 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 Engineer, 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 Engineer 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 Board (DRB) is a board of three members selected and act 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.

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.

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.

The **Engineer** is the person named in the PC who is responsible for the overall administration of the Contract on behalf of the Employer,

and the supervision of works and services to be performed thereunder. The Engineer may delegate through a written instrument some of his functions to any other competent person, retaining however the overall responsibility for the actions of that person. The Engineer may not delegate the overall administrative control of the Contract.

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 Engineer.

A **Variation** is an instruction given by the Engineer 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 Engineer 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 Engineer will provide instructions clarifying queries about these General Conditions (GC).
- 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 Engineer 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 Engineer'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 contract 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 they are deposited at a designated location within the office of the Engineer, and if a copy is sent to the Contractor's legal address.

6. Settlement of Disputes (Alternative when using a Dispute Review Board)

6.1 Dispute Review Board

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 Board ('the Board'), with a copy to the other party.

6.1.2 The Board shall be established when each of the three Board Members has signed a Board Member's Declaration of Acceptance as required by the DRB's Rules and Procedures (which, along with the Declaration of Acceptance form, are attached to the Contract). The Board shall comprise three Members experienced with the type of construction and services involved in the Contract and with the interpretation of contractual documents. One Member shall be selected by each of the Employer and the Contractor and approved by the other. If either of these Members is not so selected and approved within 28 days of the date of the Letter of Acceptance, then upon the request of either or both parties such Member shall be selected as soon as practicable by the Appointing Authority specified in the PC. The third Member shall be selected by the other two and approved by the parties. If the two Members selected by or on behalf of the parties fail to select the third Member within 14 days after the later of their selections, or if within 14 days after the selection of the third Member, the parties fail to approve that Member, then upon the request of either or both parties such third Member shall be selected promptly by the same Appointing Authority specified in the PC who shall seek the approval of the proposed third Member by the parties before selection but, failing such approval, nevertheless shall select the third Member. The third Member shall serve as Chairman of the Board.

6.1.3 In the event of death, disability, or resignation of any Member, such Member shall be replaced in the same manner as the Member being replaced was selected. If for whatever other reason a Member shall fail or be unable to serve, the Chairman (or failing the action of the Chairman then either of the other

Members) shall inform the parties and such non-serving Member shall be replaced in the same manner as the Member being replaced was selected. Any replacement made by the parties shall be completed within 28 days after the event giving rise to the vacancy on the Board, failing which the replacement shall be made by the Appointing Authority in the same manner as described above. Replacement shall be considered completed when the new Member signs the Board Member's Declaration of Acceptance. Throughout any replacement process the Members not being replaced shall continue to serve and the Board shall continue to function and its activities shall have the same force and effect as if the vacancy had not occurred, provided, however, that the Board shall not conduct a hearing nor issue a Recommendation until the replacement is completed.

6.1.4 Either the Employer or the Contractor may refer a dispute to the Board in accordance with the provisions of the DRB's Rules and Procedures, attached to the Contract. The Recommendation of the Board 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 Board, or if the Board fails to issue its Recommendation within 56 days after receipt by the Chairman of the Board of 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 Board 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 Board, 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 Board'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 Board.

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 Board for the purpose of obtaining his Recommendation(s) pursuant to Sub-Clause 6.2.1. No Recommendation shall disqualify the Board 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 Board 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.

6. Settlement of Disputes (Alternative when using a Dispute Review Expert)

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 international 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 Labour, 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 Engineer 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 Engineer.

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 Engineer

8.4.1 For those Works specified in the PC, the Contractor shall prepare (or cause its Subcontractors to prepare) and furnish to the Engineer 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 Engineer shall be executed only after the Engineer's approval thereof.

GC Sub-Clauses 8.4.2 through 8.4.7 shall apply only to those documents requiring the Engineer's approval, but not to those furnished to the Engineer for his information or review only.

8.4.2 Within fourteen (14) days after receipt by the Engineer of any document requiring the Engineer's approval in accordance with GC Sub-Clause 8.4.1, the Engineer 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 Engineer proposes.

If the Engineer fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Engineer.

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 Engineer disapproves the document, the Contractor shall modify the document and resubmit it for the Engineer's approval in accordance with GC Sub-Clause 8.4.2. If the Engineer 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 Engineer 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 DRB (or DRE) for determination in accordance with GC Sub-Clause 6.1 hereof. If such dispute or difference is referred to the DRB (or DRE), the Engineer 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 Engineer's instructions, provided that if the DRB (or 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 DRB (or DRE) shall decide, and the Time for Completion shall be extended accordingly.

8.4.6 The Engineer'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 Engineer.

8.4.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Engineer an amended document and obtained the Engineer's approval thereof, pursuant to the provisions of this GC Sub-Clause 8.4.

If the Engineer 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 request.

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 national 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. 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, national 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.

11.5 Any Plant, Material and Services that will be incorporated in or be required for the Works and Services and other supplies shall have their origin in an eligible Country as defined under the Bank's procurement guidelines.

11.6 The Contractor shall permit the World Bank to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the World Bank, if so required by the World Bank.

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 Engineer. 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 best endeavours 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 national government authorities or public service undertakings that such authorities or undertakings require the Contractor or Subcontractor or the 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

If the Engineer is not named in the Contract, then within fourteen (14) days of the issuance of the Letter of Acceptance by the Employer, the Employer shall appoint and notify the Contractor in writing of the name of the Engineer. The Employer may from time to time appoint some other person as Engineer in place of the person previously so appointed, and shall give a notice of the

name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of the Works and Services. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Engineer shall represent and act for 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, except as herein otherwise provided.

All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Engineer, except as herein otherwise provided.

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

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 Engineer 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 or the Engineer 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 Engineer signed by the Road Manager, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Engineer.

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 Engineer 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 Engineer 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 Engineer 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 Times for Completion given in the PC and any extension granted in accordance with GC Clause 64, and shall supply all such revisions to the Engineer.

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 Engineer every month together with his Monthly Statement. The progress report shall be in a form acceptable to the Engineer 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 Engineer a revised program, taking into account the prevailing circumstances, and shall notify the Engineer 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/Labour

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 Engineer of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Engineer. 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 Engineer.

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 endeavours to

assist the Contractor in obtaining any local, state or national 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, with a copy to the Engineer, 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 or the Engineer, 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 Engineer and any person authorized by the Engineer 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 Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised by either the Contractor or the Employer.

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

19. Staff and Labour

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 Engineer. The Engineer 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 Labour

- (a) The Contractor shall provide and employ on the Site for the execution of the Works and Services such skilled, semi-skilled and unskilled Labour as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local Labour 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 Labour, 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 Labour 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 endeavours to prevent any unlawful, riotous or disorderly conduct or behaviour by or amongst its employees and the Labour 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 Labour requirements established in the Specifications.
- (g) The Contractor shall, in all dealings with its Labour and the Labour 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 Labour.
- (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 Labour (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 behaviour 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 Labour as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counselling and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and Labour.

- (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 Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the 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 and the Engineer or 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 Engineer. The Contractor shall provide the Engineer with a signed report of the results of any such test and/or inspection.
- 20.4 If the Employer or Engineer (or their designated representatives) 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 Engineer with a signed report of the results thereof.
- 20.5 The Engineer 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 impedes 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 RDB (or 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 or the Engineer, 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 Engineer 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 Engineer 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. Initial Rectification and Periodic Maintenance Works

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 were 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 were 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 were offered at unit prices included in the Schedule of Prices.

22.2 The execution of Minor Improvement Works shall be requested by the Engineer, 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 Engineer shall confirm his acceptance by signing the Work Order.

23. Ordinary Maintenance

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

- Services** 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 Self-Control of Quality and Safety** 25.1 The Contractor shall, throughout the execution and completion of 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 Engineer, 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 Works and Emergency Works

27.1 Minor Improvement Works and Emergency Works shall be executed by the Contractor on the basis of Work Orders issued by the Engineer.

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 Engineer. Two copies of the Work Order shall be transmitted by the Engineer to the Contractor, who shall immediately countersign one copy, including the date of acceptance, and return it to the Engineer.

27.3 If the Contractor has any objection to a Work Order, the Road Manager shall notify the Engineer 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 Engineer 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 Engineer, 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 Engineer to issue a Taking-Over Certificate in respect of the Works and Services. The Engineer 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 Engineer 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 Engineer, 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 Engineer 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 Engineer 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 prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

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 Engineer.

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 Engineer 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 Engineer 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 Engineer 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 Engineer.
- 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 Engineer, the Contractor shall hand over the results of the tests.

31. Signaling 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 Engineer 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) ionising radiations, contamination by radioactivity from any nuclear fuel, or any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof;
- (d) 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;
- (e) 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;
- (f) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.

33. Contractor's

33.1 The Employer carries the risks which this Contract states are

- Risks** 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 the parties.

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 Engineer 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 Engineer decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Engineer shall instruct the Contractor, with a copy to the Employer, of the actions to be taken.

36.2 Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Engineer 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 Labour, 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 fulfil 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 nonperformance 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 Engineer 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 or 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

- 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

Payment

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 Engineer.

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 Emergency Works.

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 Engineer will include a lump-sum price for the works to be performed. The Lump-Sum

price for the Emergency Works will be submitted by the Contractor to the Engineer 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 Schedule of Prices for Emergency Works, and will remunerate all Emergency Activities. The prices include compliance with all Performance Indices described in the Specifications. Once approved, Emergency Works will be paid as lump sum in accordance with the schedule of payment proposed by the Contractor for the specific Emergency and approved by the Employer.

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 Engineer. 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

48.1 Contract payments shall be adjusted for increase or decrease in rates

- Adjustments** 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 Engineer 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 Engineer 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 Engineer 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 Engineer taking into account the value of the quantities of products executed and the prices in the Schedule of Prices.
- 49.5 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.
- 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 by the Engineer in accordance with GC Clause 49, within twenty-eight (28) days of the date of each certificate. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.
- 50.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause.

Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute. The interest rate shall be determined as per Sub-Clause 50.1.

50.3 Unless otherwise stated, all payments and deductions will be paid or charged in the proportions of currencies comprising the Contract Price.

50.4 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 Engineer has certified that all Defects notified by the Engineer 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 there from, 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, and in the same currency or currencies.

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 denominated in the currency or currencies of the Contract, or in a freely convertible currency acceptable to the Employer, and 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 Engineer 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 Engineer will do so upon deciding that the work is completed.

55. Final Statement

55.1 The Contractor shall supply the Engineer with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within fifty-six (56) days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer 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 Engineer 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 Engineer, 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 Engineer’s approval, the Engineer shall withhold the amount stated in the PC from payments due to the Contractor.

G. REMEDIES

58. Suspension

- 58.1 The Employer may request the Engineer, by notice to the Contractor, to order 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 Engineer.

If, by virtue of a suspension order given by the Engineer, 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 Engineer requiring 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 Engineer, 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, 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 anything 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, non-competitive 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,
- (c) 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 Engineer 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 Engineer characterizing the situation, and state estimated works quantities to correct the emergency situation, and a Lump Sum price quotation for the Emergency Works to be carried out. The price quotation should be based on the Specifications stated in Section VII using the unit prices included in the Schedule of Prices.
- 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 Quotation, the Engineer may issue a Work Order in accordance with GC Sub-Clause 29.2 for execution of the Emergency Works for a Lump-Sum amount 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 Engineer 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 the Engineer 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 (with a copy to the Engineer) 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 Engineer, 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 Engineer 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 Adjudicator 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 Engineer 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 Engineer 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 an Adjudicator, 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 Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried

out afterwards to which a commitment was made.

66. Inspections and Audits

66.1 The Contractor shall permit the Bank and/or persons appointed by the Bank 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 Bank if required by the Bank. 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 Bank'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 Bank 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 VIII

PARTICULAR CONDITIONS (PC)

Section VIII. 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.	<p>The site is the area : Ernakulam, Kottayam , Alappuzha & Pathanamthitta District of Kerala as shown in the Map in Appendix A</p> <p>The intended Completion Date is: 7 years from the start date.</p> <p>The name of the Engineer is the Chief Engineer, Road Maintenance (PWD) Thiruvananthapuram The name of the Engineer’s representative is Executive Engineer,PWD, appointed by the CE, Road Maintenance, PWD, Thiruvananthapuram</p>
3.	<p>The following documents are also part of the Contract: Appendices</p>
4.	<p>The language of the Contract is English and the law governing the Contract is the prevailing law of the Kerala State &the law of Union of India</p>
5.	<p>The address of the Employer is: Name: Project Director, KSTP, on behalf of the Governor of KERALA Address: TC 11/339, SREE BALA Building , Keston Road, Nanthancode, Kowdiar (P.O), Thiruvananthapuram695003 ,Kerala India Telephone and fax numbers: Ph: 0471 2318985/ 0471 2318946</p> <p>E-Mail address:pdkstp@gmail.com, cepmtkstp@gmail.com The address of the Contractor is: Address: Telephone and fax numbers: E-Mail address:</p>
6.	<p>Mechanism of Settlement of Dispute Review Expert (DRE)</p>
6.1.2	<p>The Appointing Authority is: The Chairman, Institution of Engineers, Kerala State Centre, Thiruvananthapuram.</p>
6.2.3	<p>In case of dispute or difference arising between employer and contactor relating to any matter setting out of or connected with this agreement such</p>

	<p>dispute or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of 3 arbitrators one each to be appointed by the Employer and the Contractor. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties and shall act as Presiding Arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Chairman, Institution of Engineers, Kerala State Centre, Thiruvananthapuram, who shall ensure the Presiding Arbitrator thus chosen has relevant judicial experience.</p> <p>If one of the parties fails to appoint its arbitrator in pursuance of Sub-clause above within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Chairman, Institution of Engineers, Kerala State Centre, Thiruvananthapuram, <u>both in cases of Foreign Contractor as well as Indian Contractor</u>, shall appoint the Arbitrator. A certified copy of the order of the Chairman, Institution of Engineers, Kerala State Centre, Thiruvananthapuram making such an appointment shall be furnished to each of the parties.</p> <p>Arbitration proceedings shall be held at Thiruvananthapuram, Kerala, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.</p> <p>The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.</p>
8.4.1	The Contractor is obliged to prepare and to furnish to the Engineer for Approval the following documents: as detailed in Clause A14 of the Technical Specifications
10.1	The Start Date shall be 21days from the date of agreement.
10.2	The Time Schedule for the achievement of specific Service Levels is: Section VI Parts C & D of the Technical Specifications
12.1	The Contractor is specifically allowed to subcontract the following activities: <i>Bituminous resurfacing</i> <i>Culvert construction</i>
12.1	Replace the word Engineer with Employer
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

	<p>value:</p> <p><i>Vegetation and scrub control</i> <i>Drain cleaning and construction</i> <i>Grading of unpaved surfaces</i></p> <p>Under no circumstances is the Contractor allowed to subcontract the RMU & PMU activities and OM activities</p>
14.2	The Employer shall give full possession of and access to the Site within 10 days from date of agreement.
16.1	<p>3rd Para 2nd Line – Replace “Adjudicator” with “Dispute Review Expert”</p> <p><i>Add the following:</i></p> <p>Representatives Engaged by the Employer</p> <p>The Employer might engage third parties as its representatives from time to time to monitor and evaluate the operation of the Performance Based Maintenance Contract on behalf of the Employer. Any such representatives as engaged by the Employer will be notified in writing to the Contractor. The Contractor shall cooperate and provide the Employer’s representatives with access to the Site, the Contractor’s facilities and with any information requested for the purpose of evaluating the performance of the Contract.</p>
19.2 (h) and (i)	The provisions concerning HIV-AIDS prevention apply .
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 VI Clause D2 and a list of PM works has been included in Part VI 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 (SCU).
25.3	Add following lines at the end of clause 25.3. The third party monitoring consultancy will be established to audit the quality of the work. Any particular complaint not resolved with third party monitoring consultant shall be referred to (PWD) Quality Control Wing, Kerala.
29.2	Add the following at the end of 1 st Sentence. Or due to the reasons beyond the control of the contractor.
35.1	The Contractor shall take out before the start date and maintain in effect the following insurances in the sums shown below:

	All risk Policy with a value equivalent to accepted contract price.	In accordance with the Insurance requirements required as per law prevailing at work place
39.1	<p>The Time for Completion are the following:</p> <p>- For whole of Works 7years from the Start Date</p> <ul style="list-style-type: none"> • Milestone 1(end of 9 months) – The Contractor shall bring all defects to below the Intervention Standards within 9 months from the Start Date by completing all Initial Rectification Works. • Milestone 2 (end of Year 1) – The Contractor shall carry out all 1st year Minor Improvement Work as specified in Schedule 4 for year 1 & Periodic Maintenance Works specified in Schedule 3 for year 1, as necessary to bring the road roughness to the required performance Criteria. • Milestone 3 (end of Year 2) – The Contractor shall carry out the Minor Improvement Works specified in Schedule 4 for year 2 & Periodic Maintenance Work as specified in Schedule 3 for year 2 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 Periodic Maintenance Work as specified in Schedule 3 for year 4 to comply with the contract roughness performance criteria. • Milestone 6 (end of Year 5) – The Contractor shall carry out the Periodic Maintenance Work as specified in Schedule 3 for year 5 to comply with the contract roughness performance criteria. • Milestone 7 (end of Year 6) – 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	<p>For Initial Rectification Works (Milestone 1) the liquidated damages shall be 1/400th (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.</p> <p>For Periodic Maintenance (Milestone 2 to 7) and Minor Improvement Works (Milestone 2) the liquidated damages shall be 1/1000th (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.</p>	
40.3	<p>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</p>	

	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	<i>Remove GC Clause 41.2 and insert the following:</i> 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.
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) per cent 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 (c) Interim Payment Certificate
45.3	Recovery of Advance Payment will commence from the fourth(4 th) month IPC payment, if contractor has received advance payment within the fourth (4 th)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 (24 th) month from the start date.
46.1	Replace the words “for Emergency Works” at the end of paragraph with the following. “provisional sum for Emergency/Day works”
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 Engineer 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.
47.3	Minor Improvement Works will be measured on the following basis: on the basis of work outputs or work inputs.
48.	<p>Price adjustment applies with indices as at <u>28 days</u> prior to bid opening</p> <p>Price Adjustments shall be made on the following basis.</p> <p>(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 Engineer. 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);</p> <p>(b) Price adjustment shall not be applied to work valued on the basis of Cost or current prices.</p> <p>(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:</p> <p><u>Ordinary Maintenance (Schedule 1) & Initial Rectification (Schedule 2):</u></p> $A_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + d \times \frac{Ce_n}{Ce_o}$ <p><u>Periodic Maintenance Work (Schedule 3)</u></p> $B_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + e \times \frac{L_n}{L_o} + f \times \frac{F_n}{F_o}$ <p><u>Minor Improvement (Schedule 4):</u></p> $C_n = a + b \times \frac{WPI_n}{WPI_o} + c \times \frac{Bi_n}{Bi_o} + d \times \frac{Ce_n}{Ce_o} + e \times \frac{L_n}{L_o} + f \times \frac{F_n}{F_o}$ <p><u>Daywork (Schedule 5)</u></p> $D_n = a + b \times \frac{WPI_n}{WPI_o}$

where:

“A_n”, “B_n”, “C_n” and “D_n” 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 & 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.

Work Type	Coefficient	Percentage Value	Cost Index Applicable to
Ordinary Maintenance (OM) & Initial rectification (IR)	a	15%	Non-adjustable portion of payments
	b	45%	Wholesale Price Index (WPI)
	c	35%	Bitumen
	d	5%	Cement
Periodic Maintenance (PM)	a	15%	Non-adjustable portion of payments
	b	20%	WPI
	c	40%	Bitumen
	e	15%	Labour
	f	10%	Fuel
Minor Improvements (MI)	a	15%	Non-adjustable portion of payments
	b	15%	WPI
	c	30%	Bitumen
	d	15%	Cement
	e	15%	Labour
	f	10%	Fuel
Emergency/Day Works	a	15%	Non-adjustable

			portion of Payments
	b	85%	WPI

“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

“L₀”, “Bi₀”, “Ce₀”, “F₀” and “WPI₀” 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.

Labour (L): Consumer Price Index for industrial workers for Hyderabad centre as published by Labour Bureau, Ministry Of Labour, Government Of India, New Delhi.

Bitumen (Bi): Official retail price of bitumen at the Hindustan Petroleum Company Limited Depot (HPCL) at Chennai.

Fuel (F): Official retail price of High Speed Diesel (HSD) at the existing consumer pumps of Bharat Petroleum Corporation (BPC) at Ongole

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:

$$\begin{aligned} \text{Amount Payable} = & A_n \times (R_{OM} + R_{IR}) \\ & + B_n \times R_{PM} \\ & + C_n \times R_{MI} \\ & + D_n \times R_D \end{aligned}$$

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

	<p>The value of R above shall be exclusive of seigniorage, GST and other statutory taxes.</p> <p>Payments not subject to Price Escalation</p> <p>Payments made to the Contractor in respect of the following items will not be adjusted in accordance with Price Escalation:</p> <p>(a) variations ordered by the Engineer except where the variations so ordered are valued at rates lodged in Schedule 1, 2, 3 and 4 with the tender;</p> <p>(b) payments made in regard to the return of retention money or security deposit</p> <p>(c) net procurement cost for the purchase of the Patrol Maintenance Unit, fifth wheel Bump Integrator or equivalent sensor based equipment & new Road Management Unit (RMU).</p>
50.2	2 nd Line – Replace “Adjudicator” with “Dispute Review Expert”
51.1	The retention for Initial Rectification, Periodic Maintenance and Minor Improvement Works is fixed at five (5) percentage :
51.2	<p>GC Clauses 51.2 and 51.3 are substituted by the following.</p> <p>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 Engineer has certified that all defects notified by the Engineer 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</p> <p>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 Engineer has certified that all defects notified by the Engineer 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</p> <p>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 Engineer has certified that all defects notified by the Engineer 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</p>
51.3	<i>GC Clause 51.3 may be deleted.</i>

51.4	<p><i>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:</i></p> <p>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.</p> <p>If the Contractor incurs a deduction to the Monthly Lump sum payment for OM as applicable under Clause C7 of the Technical Specification of:</p> <p>(i) 25% or more of the possible monthly Lump Sum payment for</p> <p style="padding-left: 40px;">(a) any three consecutive months, or</p> <p style="padding-left: 40px;">(b) for any six months during the period of the Contract, or</p> <p>(ii) 50% or more of the possible monthly Lump Sum payment for any one month</p> <p>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 © of the Particular Conditions, all the due amounts to the contractor will be retained.</p>
52.3	The liability of service tax , on road maintenance component of this contract, if any, will be treated as new tax and will be dealt with as per General condition 52.3
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) per cent 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 A Bank guarantee in the Form Given in Section IX or Bank Draft, in favour of Project Director , payable at the Thiruvananthapuram District, Kerala, India
57.1	<p><i>The following Drawings and/or Manuals are required at the following dates:</i></p> <p><i>As built drawings for Culverts and Improvement Works – 60 days after completion</i></p> <p><i>Bar Charts for Resurfacing Works – 30 days after completion</i></p>
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.
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
63.2.7	3 rd Para 3rd Line – Replace “Adjudicator” with “Dispute Review Expert”
64.2	11 th Line – Replace “Adjudicator” with “Dispute Review Expert”

SECTION IX
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)

To: _____ [date]
_____ [name
and address of the Contractor]

Dear Sirs,

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

We accept/do not accept that _____ be appointed as the Dispute
Review Expert².

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 clause 34.5, for an amount of Rs. _____ within 21 days
in accordance with the Conditions of Contract using for that purpose form in Section IX annex D and
sign the contract, failing which action as stated in Para 41.2 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 theday of.....,

Between The Project Director, KSTP (for and on behalf of the Governor of Kerala) (“**The Employer**”) of the one part, and

[Name & address of Contractor]..... (“**The Contractor**”) of the other part.

Whereas theEmployer is desirous that the Contractor execute Output and Performance based Road Contract for the maintenance of Roads under Package - 01 in Ernakulam, Kottayam , Alappuzha & PathanamthittaDistrict of Kerala, Contract No.KSTP/OPBRC –01(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.....

ROAD	ROAD SECTION	DISTRICT	Chainage (Km)		Length
			From	To	[km]

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 VII – General Conditions,
 - iv) Section VIII – Particular Conditions
 - v) Section VI – 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 A15.1 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

O.....

was here unto affixed in the presence of :

Signed, sealed and delivered by the said

in the presence of:

Binding Signature of Employer

The Project Director, KSTP, Thiruvananthapuram
(for and on behalf of the Governor of Kerala,)

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 obligator and not as Surety merely, the payment to _____ [name of Employer] on his first demand without whatsoever right of objection on our part and without his first claim to the Contractor, in the amount not exceeding _____ [amount of guarantee]¹ _____ [in words].

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed 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 has received a copy of the Performance Certificate issued by the Engineer. 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 Video graphic 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 – DRAWINGS**Map 6.1 Road Network for Output and Performance Based Road Contract (OPBRC)
Contract No. KSTP/OPBRC –01**

Sl No	Name of Road	Length in km	District
1	Chengannur – Angamali road Ch: 151/500 to 205/624 and 207/555 to 240/000 [From Aida Junction, Kottayam to Angamaly Junction (part of State Highway No.1- MC road) excluding Muvattupuzha Town portion]	86.569	Kottayam and Ernakulam
2	Mavelikkara – Chengannur Road Ch 6/986 to 16/500 [From Kollakadavu to Chengannur]	9.514	Alappuzha
3	Chengannur road – Kozhencherry road Ch 16/500 to 28/300 [From Chengannor to Thekkemala Junction excluding Iycad bridge]	11.670	Alappuzha and Pathamathitta
	Total length	107.753 km	

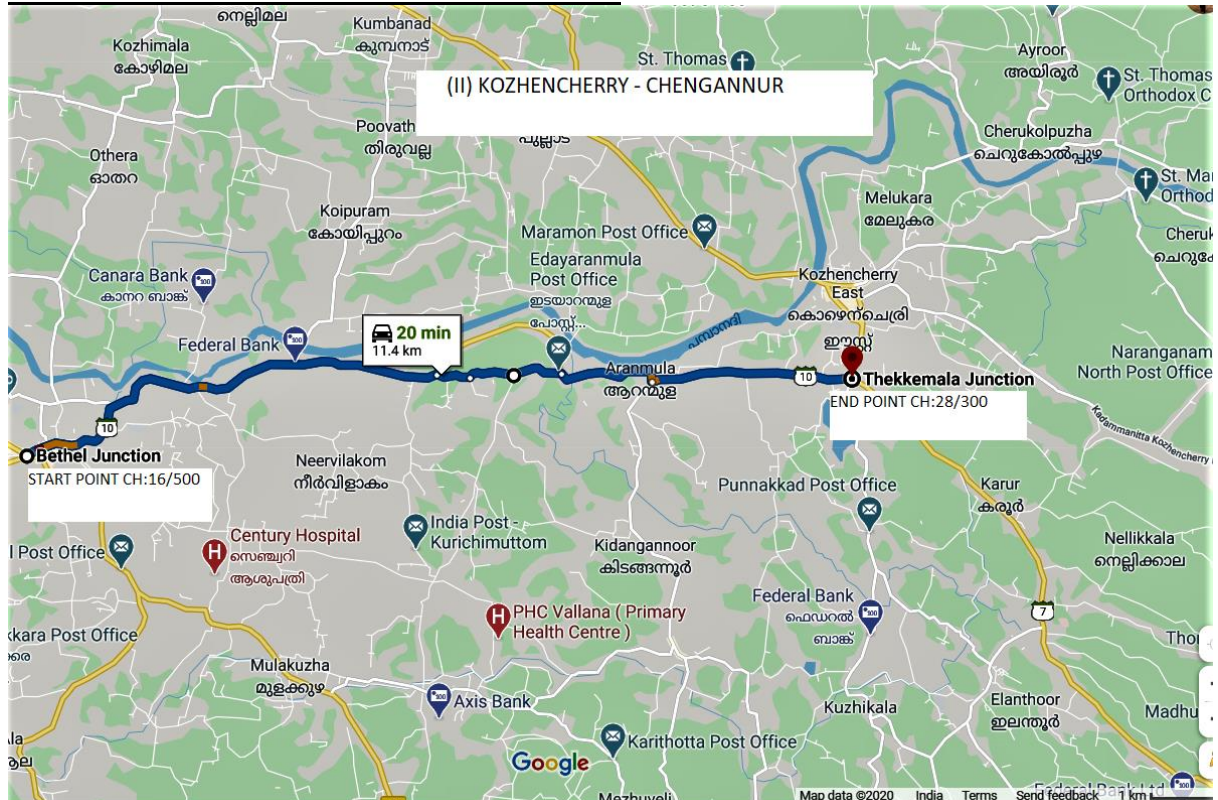
ROAD NO. 1 CHENGANNUR- ANGAMALY ROAD



ROAD NO. 2 MAVELIKKARA- CHENGANNUR



ROAD NO 3 – CHENGANNUR- KOZHENCHERRY



APPENDIX B – ASSET INVENTORY INFORMATION**B.1 ROAD INVENTORY**

Road	District	Length (kms)	Average RoW Width	Average Carriage way width	Number of CD structures
Chengannur Angamali					
151/500 to 187/800	Kottayam	56.6	17.3m	11m	127
187/800 to 205/624 and 207/555 to 240/000	Ernakulam	50.269	17.5m	12m	117
Mavelikkara - Chengannur					
6/986 to 16.500	Alappuzha	9.514	11.0	6	18
Chengannur -Kozhencherry					
16.500 to 19.925	Alappuzha	3.425	10.5	6.3	18
19.925 to 28.300 less portion of road at Bridge and approach (19/500)	Pathanamthitta	8.245	9.6	6.3	

CULVERT INVENTORY DETAILS FOR OPBRC PKG-1

Chainage	Type of CD work Pipe/RCC/Slab culvert
151/120	SLAB
152/13	SLAB
153/700	SLAB
154/12	SLAB
154/183	SLAB
154/470	SLAB
155/456	SLAB
155/670	SLAB
155/897	SLAB
156/253	SLAB
156/425	SLAB
156/801	SLAB
157/271	SLAB
157/477	SLAB
157/944	SLAB
158/595	SLAB

158/947	SLAB
159/150	SLAB
159/580	SLAB
159/906	SLAB
160/207	SLAB
160/524	SLAB
160/950	SLAB
161/162	SLAB
161/896	SLAB
162/22	SLAB
162/685	SLAB
163/334	SLAB
163/796	SLAB
164/300	SLAB
164/828	SLAB
165/61	SLAB
165/890	SLAB
165/905	SLAB
166/728	SLAB
167/50	SLAB
167/650	SLAB
168/302	SLAB
169/130	SLAB
169/270	SLAB
169/605	SLAB
170/50	SLAB
170/250	SLAB
170/595	SLAB
170/880	SLAB
171/305	SLAB
171/412	SLAB
171/490	SLAB
171/820	SLAB
172/130	SLAB
172/620	SLAB
172/870	SLAB
173/230	SLAB
173/350	SLAB
173/710	SLAB
174/430	SLAB
174/580	SLAB
174/650	SLAB
174/820	SLAB
175/330	SLAB
176/50	SLAB
176/320	SLAB
176/490	SLAB
176/710	SLAB
177/130	SLAB
177/840	SLAB

178/100	SLAB
178/240	SLAB
178/580	SLAB
179/220	SLAB
179/420	SLAB
179/580	SLAB
179/695	SLAB
180/22	SLAB
180/197	SLAB
180/294	SLAB
180/484	SLAB
180/716	SLAB
180/812	SLAB
181/028	SLAB
181/430	SLAB
181/683	SLAB
181/630	PIPE
182/828	PIPE
183/608	SLAB
184/624	SLAB
185/361	SLAB
185/680	SLAB
185/850	SLAB
186/070	SLAB
186/808	SLAB
186/905	SLAB
187/105	SLAB
187/405	SLAB
187.405	Bridge
187.861	Slab Culvert
188.152	Slab Culvert
189.773	Bridge
190.103	Slab Culvert
190.776	Slab Culvert
191.000	Slab Culvert
191.087	Slab Culvert
191.320	Slab Culvert
191.580	Slab Culvert
192.650	Slab Culvert
192.895	Slab Culvert
193.458	Slab Culvert
193.655	Bridge
193.801	Slab Culvert
193.914	Slab Culvert
194.027	Slab Culvert
194.215	Slab Culvert
194.688	Slab Culvert
195.310	Slab Culvert
195.777	Slab Culvert
196.058	Slab Culvert

196.305	Bridge
196.379	Slab Culvert
196.856	Slab Culvert
197.109	Slab Culvert
197.660	Slab Culvert
197.931	Slab Culvert
198.792	Slab Culvert
199.135	Slab Culvert
199.452	Slab Culvert
199.793	Slab Culvert
201.087	Slab Culvert
201.114	Slab Culvert
201.470	Slab Culvert
201.561	Slab Culvert
201.893	Slab Culvert
202.431	Slab Culvert
202.875	Slab Culvert
204.505	Pipe Culvert
204.665	Slab Culvert
204.916	Slab Culvert
205.065	Slab Culvert
206.905	New Bridge
206.905	Old Bridge
208.263	Slab Culvert
208.433	Slab Culvert
208.865	Slab Culvert
209.178	Slab Culvert
209.795	Slab Culvert
209.967	Slab Culvert
210.405	Slab Culvert
211.505	Slab Culvert
211.587	Slab Culvert
211.667	Slab Culvert
211.877	Slab Culvert
212.085	Slab Culvert
212.156	Slab Culvert
212.903	Slab Culvert
213.117	Bridge
213.503	Slab Culvert
213.722	Slab Culvert
214.092	Slab Culvert
214.362	PIPE
214.820	Slab Culvert
215.168	Slab Culvert
215.376	Slab Culvert
215.463	Slab Culvert
216.124	BRIDGE
216.725	PIPE
217.007	Canal crossing
217.192	PIPE

217.371	PIPE
217.939	PIPE
218.328	PIPE
218.370	BRIDGE
218.584	Slab Culvert
218.873	BRIDGE (2 Span)
219.097	Slab Culvert
219.424	Slab Culvert
220.070	Double BRIDGE
220.619	Slab Culvert
221.146	Slab Culvert
221.438	Slab Culvert
221.595	Slab Culvert
221.690	Slab Culvert
221.989	Slab Culvert
222.146	PIPE
222.307	Slab Culvert
222.720	Slab Culvert
222.812	Canal crossing
223.620	Slab Culvert
224.059	PIPE
224.668	BRIDGE (2 Span)
225.142	Slab Culvert
225.483	Slab Culvert
226.853	Box Culvert
227.233	Slab Culvert
228.294	BRIBGE
228.836	PIPE
229.324	Slab Culvert
229.648	Slab Culvert
229.843	Slab Culvert
230.011	Slab Culvert
230.292	Slab Culvert
231.397	Slab Culvert
231.406	Slab Culvert (skew)
232.186	Slab Culvert
232.608	Kalady Bridge
233.497	Slab Culvert
233.884	Slab Culvert
234.021	Slab Culvert
234.255	Slab Culvert
235.028	Slab Culvert
235.476	Slab Culvert
235.846	Slab Culvert
236.432	Slab Culvert
237.184	Slab Culvert
237.557	Slab Culvert
237.913	BRIDGE (4 span)

Mavelikkara-Chengannur

Location	Type of CD work Pipe/RCC/Slab culvert
7.908	Slab
8.633	Bridge
9.028	Slab
9.491	Slab
9.814	Slab
10.593	Bridge
11.516	RCC
12.592	Slab
13.263	Bridge
13.807	Slab
14.175	Slab
14.757	Slab
14.926	Slab
15.333	Slab
15.692	Bridge
15.778	Slab
16.326	Slab

Chengannur-Kozhencherry

Location	Type of CD work Pipe/RCC/Slab culvert
17/284	Box (Blocked)
17/900	Box (Blocked)
18/230	Slab (Bridge)
19/200	Box (Blocked)
19/450	Box (Blocked)
19/650	Slab (Bridge)
21/000	Box (Blocked)
21/450	Box (Blocked)
22/450	Slab (Bridge)
24/400	Box (Blocked)
24/600	Box (Blocked)
24/750	Slab (Bridge)
26/200	Box (Blocked)
26/400	Box (Blocked)
26/580	Box (Blocked)
27/150	Box (Blocked)
27/350	Box (Blocked)
27/700	Box (Blocked)
27/920	Box (Blocked)

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 Engineer. 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 Engineer.

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 Engineer.

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 Engineer.

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 Engineer

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 Engineer. This schedule is 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 Engineer 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 Engineer within 7 days of registering the non-conformances. This form should be used in a constructively 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 Engineer 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 Engineer 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 Kerala PUBLIC WORKS DEPARTMENT		ORDINARY MAINTENANCE INSPECTION REPORT Follow instructions for observing defects and reporting required											Form OM01				
Road From:		To:											Sheet: Of				
Name of Road :		Kilometre measured from:											Date: / /				
Inspector :		Position:											Signature:				
Standard work item		Work	Units of work required in each kilometre and priority										Total units				Comments
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	no w	2w	1m	3m	
OM100 Sealed Pavement																	
OM101	Pothole Patching	m ²															
OM102	Surface Depression and Rut Patching	m ²															
OM103	Crack Sealing	Lm															
OM104	Surface Treatment																
	(a) Loss of Aggregate (Surface Ravelling)	m ²															
	(b) Bleeding / Flushing	m ²															
	(c) Crocodile Cracking	m ²															
	(d) Laminations	m ²															
OM105	Pavement sweeping	m ²															
OM106	Edge Repair	m ²															
OM107	Digouts	m ²															
OM108	Concrete Pavement	m ³															
OM200 Shoulder																	
OM201	Unsealed Shoulder																

	(a) Edge Drop-off	Lm															
	(b) Roughness, Scouring or Potholes	Lm															
	(c) Holding water	Lm															
OM202	Power Grading	Km															
OM203	Emb and Batter Repair	No															
OM 300 Drainage																	
OM301	Surface Drains & Verge	Lm															
OM302	Culvert Pit Cleaning and Stormwater Drains	Lm															
OM303	Culvert and Pit Repair																
OM304	Stream Maintenance	m ²															

Incorporated into work schedule by: Signed by.....on...../...../.....
File this form

Standard work item		Work	Units of work required in each kilometre and priority										Total units in next				Comments
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	now	2w	1m	3m	
OM400 Vegetation																	
	Grass Control																
	a) Roadside – General Tidy	Ha															
	b) Medians and Traffic Islands	Ha															

	c) Road Intersections - Maintain Sight Distance	Ha															
	d) Clear near safety signs, kilometre posts and roadside furniture	Ha															
OM402	Tree and Shrub Management	Hr															
OM500 Furniture																	
OM501	Signs Maintenance	No															
OM502	Guardstones	Lm															
OM503	Guideposts, Distance Markers, Delineator, Painted Trees	No															
OM504	Footways	m ²															
OM505	Roadmarkings and Cats Eyes	No															
OM600 Structures																	
OM601	Bridge Maintenance																
	a) Cleaning and clearing of deck, footway, expansion joints, scuppers and down pipes	Hr															
	b) Repair and painting including repair of spalled posts and	Hr															

	parapets																	
Incorporated into work schedule by: Signed by.....on...../...../.....File this form																		

Standard work item		Work	Units of work required in each kilometre and priority										Total units in next				Comments	
No.	Name	Units	1	2	3	4	5	6	7	8	9	10	no w	2w	1m	3m		
OM700 Operational Servicing																		
OM701	Land Slip Clearing	m ³																
OM702	Emergency Works and Services	No																
OM703	Vandalism Repair	Hr																
OM704	Road Obstructions/ Dead Animals	Lm																
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

**Government of KERALA
PUBLIC WORKS
DEPARTMENT**

**Form
OM03**

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:

Date of Inspection:...../...../.....

Approaches	<input type="checkbox"/>	Signs	<input type="checkbox"/>	Barrier Stones	<input type="checkbox"/>	Bearings	<input type="checkbox"/>	Services	<input type="checkbox"/>
Road drainage	<input type="checkbox"/>	Deck & footway	<input type="checkbox"/>	Superstruc ture	<input type="checkbox"/>	Retaining walls	<input type="checkbox"/>	<input type="checkbox"/>
Roadway	<input type="checkbox"/>	Joints Deck	<input type="checkbox"/>	Paint	<input type="checkbox"/>	Waterway	<input type="checkbox"/>	<input type="checkbox"/>
Guard-rails	<input type="checkbox"/>	Drainage	<input type="checkbox"/>	Substructu re	<input type="checkbox"/>	Erosion	<input type="checkbox"/>	<input type="checkbox"/>

Record Ordinary maintenance required:

Standard work item		Work	Work	Total units in next				Comments
No.	Name	Unit	Required	now	2w	1m	3m	
Bridges Maintenance and Drainage								
OM301 Surface Drains and Verges								
	Surface drains cleaning							
	Unlined drain debris remove							
	Unlined drain re-grade							
	Lined drain debris remove							
	Lined drain repair							
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							

Standard work item		Work	Work	Total units in next				Comments
No.	Name	Unit	Required	now	2w	1m	3m	
OM601 Bridge Structure								
	Joint sealant repair							
	Concrete spall repair							
	Bridge deck and joint							
	Bridge deck drainage							
	Hand rail repair							
	Bridge repaint							
	Bridge minor structure							
Details of Other Items								

Is higher level inspection required? Yes <input type="checkbox"/> No <input type="checkbox"/> Why?.....	Urgent work required:

**Government of KERALA
PUBLIC WORKS
DEPARTMENT**

Form OM06

MONTHLY WORKS PROGRAM

Contractor : Road.....

Period from :/...../..... to/...../.....

Standard Work item		Location	Gang size	Equipment	Quantity Man/Day	Dates																												Total Works Completed			
No.	Name					S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S				

Planned by: On/...../.....

Name Signature

Approved by: On/...../.....

Name Signature

Government of KERALA - PUBLIC WORKS DEPARTMENT **Form OM07**

MONTHLY PROGRESS REPORT (Form OM04)

Road No. Road Name from to

.....

.....

Period for the month of

.....

Standard work item		Work	Previ ous	Quant ity	Quant ity	Rs.	Rs.	Rs.	Comments
No.	Description	Unit	Quant ity	(Mon th)	(Total)	(Previo us)	(Mont h)	(Tot al)	
1 Pavement Maintenance									
OM100 Sealed Surface									
OM101	Pothole patching	m ²							
OM102	Regulation of wheel ruts and depressions	m ²							
OM103	Crack sealing	Lm							
OM104	Surface Treatment								
	(a) Loss of aggregate (Surface ravelling)	m ²							
	(b) bleeding / flushing	m ²							
	(c) crocodile cracking	m ²							
OM105	Pavement cleaning	m ²							
OM106	Edge repair	m ²							

OM107	Digouts	m ²							
OM108	Repair concrete pavement	M ³							
OM200 Shoulder									
OM201	Unsealed Shoulder								
	(a) Drop off from edge of seal to shoulder	Lm							
	(b) Roughness, Scouring or Potholes	Lm							
	(c) Holding water	Lm							
OM202	Power grading of shoulders	km							
OM203	Embankment and batter repair	No							

Standard work item		Work	Previ ous	Quant ity	Quant ity	Rs.	Rs.	Rs.	Comments
No.	Description	Unit	Quant ity	(Mon th)	(Total)	(Previo us)	(Mont h)	(Tot al)	
OM 300 Drainage									
OM301	Surface Drains and Verges	Lm							
OM302	Culvert Pit Cleaning and Strom	Lm							
OM303	Culvert and Pit Repair								
OM304	Stream Maintenance	m ²							
OM 700 Operational Servicing									
OM701	Land Slip Clearing	m ³							
OM702	Emergency Works and Services	No							
OM803	Vandalism Repair	Hr							
OM804	Litter control / Dead animals	Lm							
2. Roadside Maintenance									
OM400 Vegetation									

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	m ²							
OM505	Roadmarking and Cats Eyes	No							

3. Bridge Maintenance

OM600 Structures

OM 601	Bridge Maintenance	Hr							
--------	--------------------	----	--	--	--	--	--	--	--

Progress prepared by: _____ on / /

Signatur

Checked by: _____ on / /

Signatur

Approved for PWD by: _____ on / /

CONTRACT No: _____	<u>MAINTENANCE PROGRAM COMPLIANCE SHEET (OM08 A)</u>	Page: of
ROAD: _____	FROM: _____	Date: _____
CONTRACTOR: _____		TO: _____
		INSPECTOR: _____

REF	STANDARD JOB	DISTANCE (i.e. 3 is between 3km and 4km stones)										DETAILS (Non-compliance Report etc.)
		0	...1	...2	...3	...4	...5	...6	...7	...8	...9	
OM101	Pothole Patching											
OM102	Regulation											
OM103	Crack Sealing											
OM104	Surface Treatment											
OM105	Pavement											
OM106	Edge Repair											
OM107	Digout Repair											
OM108	Concrete Pav											
OM201	Shoulder Repair											
OM202	Power Grading											
OM203	Emb & Batter											
OM301	Drains Cleaning											
OM302	Culvert Cleaning											
OM303	Culverts Repair											
OM304	Stream											
OM401	Grass Control											
OM402	Tree Trimming											
OM501	Sign Maintenance											
OM502	Guardstones											
OM503	Distance Markers											
OM504	Footways											
OM505	Rd Marking & CE											
OM601	Bridge											
OM701	Land Slip											
OM702	Emergency Works											
OM703	Vandalism Repair											
OM704	Road Obs & DA											

CONTRACT NO.		MANAGEMENT PROGRAM COMPLIANCE SHEET (OM 08 B)		Page ----- of	
		Date			
ROAD FROM				TO	
CONTRACTOR				INSPECTOR	
Sl No.	Management Requirements	Details (Compliance /Non Compliance)			
1	Initial condition report				
2	Mile stone Completion report				
3	As built drawings for culverts and improvement works				
4	Bar chars for resurfacing works				
5	Environmental compliance				
6	Ordinary Maintenance inspection reports				
7	Weekly Hazard Inspection reports				
8	Bridge and major culvert inspection reports				
9	Night Inspection reports				
10	Monthly works programme				
11	Maintenance programme compliance report				
12	Any other report				
ENGINEER / ENGINEER'S REPRESENTATIVE		Name		Signature	

<u>NON-CONFORMANCE REPORT</u>		Form OM9
<u>Report No:</u>		
CONTRACTOR:	Date:
CONTRACT No:	Originator:
ROAD:	Location:
<u>Description of Non-Conformance:</u>		
.....		
<u>Corrective Action:</u>		
.....		
Date of Anticipated Completion:		
Checked By:	<u>NAM</u>	<u>SIGNATU</u>
Date of Actual Completion:		
ENGINEER:	<u>NAM</u>	<u>SIGNATU</u>

Form 0M10

Condition Survey – Field Data Collection

Sheet.....of

Date:..... Road No:Road
Name:.....

Chainage:to.....

Standard Work Item	Kms						Remarks
Pothole	m ²						
Pothole	No.						
Dep & Rut Patch	m ²						
Crack Sealing	m						
Edge Breaks>100mm	m						
(a) Stripping+Ravelling	m ²						
(b) Bleeding	m ²						
(c) Crocodile	m ²						
(d) Delamination	m ²						
Culvert Cleaning	No						
Culvert Painting	No.						
Culvert+Drain Repair	No.						
Guard Stone Paint	No.						
Guard Stone Replace	No.						
Dist. Markers Paint	No.						
Dist. Markers Repair/Replace	No.						
(a)Low Shoulder	m						
(b) High Shoulder	m ²						
(c) Spot Shoulder	m ²						
Dig -Out	m ²						
Trench Filling	No.						
Damage Signs	No.						
Missing Signs	No.						
Bridge Parapet Repair	No.						

Government of KERALA - PUBLIC WORKS DEPARTMENT

Form OM 12

MONTHLY PROGRESS REPORT FOR INITIAL RECTIFICATION WORKS

Road No.

Road Name

from to

.....

Period for the month of

.....

....

Standard work item	Work	Kilometres															Total Cost in Rs.	Remarks			
		Description	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13			14	15	
1. Pavement Repairs such as Pot hole patching, Ruts and Depressions, Stripping, Crack sealing and Crocodile Cracking, Delamination, Edge Repair, Digouts etc.,																					
1	Tack Coat	m ²																			
2	Bituminous Macadam	m ²																			
3	Semi-Dense Bituminous Concrete	m ²																			
4	Minor Dig outs	m ²																			
5	Light Surfacing Seal	m ²																			
6	Slurry Seal	m ²																			
7	Edge repair	Lm																			
8	Any other activity																				

2. Shoulder																			
1	Repairs to shoulders	Cum																	
2	Repairs to low shoulder	Cum																	
3	Any other activity																		
3. Removal of Jungle.																			
1	Light Jungle	m ²																	
2	Scrub Jungle	m ²																	
3	Heavy jungle	m ²																	
4	Juliflora	m ²																	
5	Any other activity																		
4. Cross Drainage Works																			
1	Concrete	m ³																	
2	Brick Masonry	m ³																	
3	Random Rubble Masonry	m ³																	
4	Plastering with Cement Mortar	m ²																	
5	Pointing with Cement Mortar	m ²																	
6	Clearing of Vents	Nos/ m ³																	
7	Grouted Pitching	m ³																	
8	Revetment	m ³																	
9	White Washing	m ²																	
10	Synthetic Enamel Paint	m ²																	

11	Any other activity																	
5. Road Safety and Informatory items																		
1	KM Stones	nos.																
2	HM Stones	nos.																
3	Guide/Guard Stones	nos.																
4	Sign/Caution Boards	nos.																
5	Information Boards (Village name Boards, Junction Boards)	nos.																
6	Any other activity																	
6. Road Marking Items																		
1	Centre line Marking	m ²																
2	Edge marking	m ²																
3	Pavement Markers (Road Studs)	nos.																
4	Any other activity																	

CONTRACT No: _____	<u>INITIAL RECTIFICATIONS SERVICE LEVEL COMPLIANCE</u>	Page: of
	<u>SHEET (OM13)</u>	Date: _____
RO _____	FROM: _____	TO: _____
AD: _____		
CONTRACTOR: _____		INSPECTOR: _____

RE F	Items	DISTANCE (i.e. 3 is between 3km and 4km stones)										DETAILS (Non-compliance Report etc.)
		1	2	3	4	5	6	7	8	9	10	
1.	Bituminous Pavement Repairs											
2.	Unsealed Shoulder											
3.	Clearing of Jungle											
4..	Cross Drainage Works											
	(a) Culverts											
	(b) Minor Bridges											
	(c) Major Bridges											
5.	Road Safety, Informatory and Road furniture											
6.	Road Marking Items											

**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 or to the Engineer concerning conduct of the Works. The DRE:
 - (a) shall have no financial interest in any party to the Contract, or the Engineer, 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, or the Engineer, 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, or the Engineer, 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, or the Engineer, 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, or with the Engineer, 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, the Contractor, and the Engineer, 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, the Contractor, or the Engineer 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 and the Engineer 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 fee 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 and the Engineer 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, the Contractor, and the Engineer.

(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 and to the Engineer.

9. Procedure for Dispute Referral to the DRE:

(a) If either party objects to any action or inaction of the other party or the Engineer, the objecting party may file a written Notice of Dispute to the other party with a copy to the Engineer 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 the Engineer, 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, the Employer and the Engineer 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, the Contractor, and the Engineer 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, the Engineer, 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 and to the Engineer. 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 _____ (*name of the 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 upto 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 Employer 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 Contractor's share on this account (half the paid amount) will be recovered by the Employer from the Contractor's bills against the work.

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.24, 25 and 26 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 and if necessary with the Contractor 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 manufacturing or 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 assignments 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 recommendation 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]
Recommendation 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.

RECOMMENDATION

The Dispute Review Expert’s specific recommendation for settlement of the dispute. (The recommended course is consistent with the explanation).

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.

Respectfully submitted,

Date: _____

Date: _____

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 30 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 Video graphic recording shall be done at the running vehicular speed of 5 Kmph and the vehicle running in the pro direction of Sun rays. The Engineer 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 Engineer or his nominated representative. The Contractor shall supply the Engineer 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 and Social Issues**

Project Name: _____ Contract /Road No. _____

Contractor Details: _____

Project Description: _____

Questions		Response (see note at the end of the checklist)
Activities		
1.	List the activities you will be undertaking during the works such as rock breaking, blasting, laying asphalt, establishing camp and plants etc.	
Responsibilities		
2.	Do you have any qualified/experienced person on environmental management? If not, how are you going to manage the environment and Social aspects?	
Materials		
3.	What base materials will you transport to the site such as stone, soil, diesel, lubricant?	
4.	Where will you source these materials from (non-manufactured material such as sand, soil, stone)?	
5.	Where will you store these materials?	
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?	
Emissions to water, soil and air (Pollutants)		
7.	How will you ensure that any construction materials and works will: <ul style="list-style-type: none"> • Not restrict access to properties and carriageways. • Not damage existing trees. • Be protected from rain to reduce the loss of soil and materials washing down roads and entering drains and waterways. • Be stored to reduce leaks (such as Diesel) into the soil or waterways. • Not generate dust or cause nuisance air emissions. 	
8.	How will you ensure proper drainage from the works so that water does not pond and become a hazard to health?	
9.	How will you reduce sediment from the construction activities?	
Fauna and Flora		
10.	How many trees will you have to remove to undertake the works?	
11.	What will you do with any trees that are removed?	

Questions		Response (see note at the end of the checklist)
12.	How will you protect existing trees from construction activities?	
Waste Management		
13.	How do you plan to store and dispose of: <ul style="list-style-type: none"> • Construction debris? • Workers refuse and effluent? • General litter? 	
Noise and Vibration		
14.	Will you be using any noisy equipment that may cause nuisance?	
15.	Are your works close to a school, or hospital or other place where people may be affected by noise?	
16.	What will you do to reduce noise and vibration impacts?	
17.	What will be your working hours?	
Construction Camp / Workers' Camp		
18.	Where you are planning to set up construction and workers camp?	
19.	Does it meet the stipulated siting criteria?	
20.	How you are going to control pollution from contraction plan and equipment?	
21.	What facilities you will provide at camp for workers?	
Community, Awareness, Consultation, Co-ordination		
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?	
23.	How will you ensure all the sub-contractors, supervisor and others on the site, are aware of these environmental and social aspects?	
24.	How will you co-ordinate with utility works (such as electricity, telephone, cable)?	
25.	Can you satisfy the special regulations or environmental conditions identified in the contract for this project?	
26.	Have you attended any training course on environment, health and safety for similar construction project?	
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?	
Safety		
28.	What activities could cause harm to people or property?	
29.	How will you reduce the risk of impact on people or their property?	
30.	How will you reduce potential injury to your workers and subcontractors?	

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 Engineer.
- 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)**

Sl. No.	Environmental Issue	Location/ sources	Mitigation Measures	Implementing Agency	Supervising & Monitoring Agency
Pre-Construction Phase					
P.1	Ecologically sensitive areas (protected forests, reserve forests, wildlife sanctuary, national park, tiger reserve etc.)	Road sections pass through ecologically sensitive areas	<ul style="list-style-type: none"> 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 ESMF. No tree felling should be allowed No breaking of fresh forest land should be carried out. While black-topping, 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. 	PWD	Concerned competent authority & Third Party Monitoring Agency

Construction Phase					
C.1	Air Pollution	Construction plants, equipment and vehicles	<ul style="list-style-type: none"> • 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. • <u>For Construction plant following will be maintained:</u> • 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 • 1.5 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 • away from agricultural land • preference to barren land • Obtaining Consent-for-Establishment (CFE) and Obtaining Consent-for-Operation (CFO) under Air and Water Acts from the KERALA State Pollution Control (KSPCB). • Ensure adequate stack height for HMP as stipulated in CFE, • Install emission control devices such as bag house filters, cyclone separators, water scrubbers etc. • Bag house filter / multi-cone cyclone for emission control. For bag house, cartridge filters reported to be more efficient than fabric filters • Pollution control measures for Diesel Generator (DG) set i.e. stack height, acoustic enclosure etc. • Greenbelt along the periphery of plant site. 	Contractor	PWD

		Dust during earth works or from spoil dumps	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.	Contractor	PWD
		Storage of maintenance materials	Proper stockpiling and sprinkling of water as necessary.	Contractor	PWD
C.2	Water Pollution	Clearing of waterways of cross drainage works including bridges and clearing of longitudinal side drains	<ul style="list-style-type: none"> • 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 areas². 	Contractor	PWD
		Construction vehicles	<ul style="list-style-type: none"> • Avoiding cleaning / washing of construction vehicle in any water body 	Contractor	PWD

²Designated areas are to be identified and finalized by Contractor in consultation with Engineer in accordance with relevant ESMF Guidelines.

		<p>Construction camp and workers' camp</p>	<ul style="list-style-type: none"> • Minimum distance of 1.5 km from river, stream and lake and 500 m from ponds • Locate facilities in areas not affected by flooding and clear of any natural or storm water courses. • The ground should have gentle slope to allow free drainage of the site. • 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 Engineer. • The camp must have impervious flooring to prevent seepage of any leaked oil & grease into the ground. The area should be covered with a roof to prevent the entry of rainwater. • 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. • 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. • 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. 	<p>Contractor</p>	<p>PWD</p>
--	--	---	---	--------------------------	-------------------

<p>C.3</p>	<p>Noise Pollution and Vibration</p>	<p>Vehicles and Construction machinery</p>	<p>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.</p> <p>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.</p> <p>Protection devices (ear plugs or ear muffs) will be provided to the workers operating in the vicinity of high noise generating machines.</p> <p>Construction equipment and machinery will be fitted with silencers and maintained properly.</p> <ul style="list-style-type: none"> • Source-control through proper maintenance of all equipment. • Use of properly designed engine enclosures and intake silencers. <p>Vehicles and equipment used will confirm to the prescribed noise pollution norms.</p> <p>Movements of heavy construction vehicles and equipment near public properties will be restricted.</p> <ul style="list-style-type: none"> • Comply with sitting criteria construction plants and installations and maintenance of pollution control devices as mentioned in Appendix 9 of ESMF. • Refer Appendix 10 of ESMF for identification, and operation of quarry areas and adopting controlled blasting. • Refer Appendix 16 of ESMF for available licensed quarry along the project road. 	<p>Contractor</p>	<p>PWD</p>
------------	--------------------------------------	--	---	-------------------	------------

C.4	Land Pollution	Spillage from plant and equipment at construction camp	<p>Providing impervious platform and oil and grease trap for collection of spillage from construction equipment vehicle maintenance platform</p> <p>Collection oil and lubes drips in container during repairing construction equipment vehicles</p> <p>Providing impervious platform and collection tank for spillage of liquid fuel and lubes at storage area</p> <p>Providing bulk bituminous storage tank instead of drums for storage of bitumen and bitumen emulsion</p> <p>Providing impervious base at bitumen and emulsion storage area and regular clearing of any bitumen spillage for controlled disposal</p> <p>Reusing bitumen spillage</p> <p>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.</p> <p>Refer Appendix 8 and Appendix 9 of ESMF.</p>	Contractor	PWD
		Domestic solid waste and liquid waste generated at camp	<p>Collecting kitchen waste at separate bins and disposing of in a pit at designated area/s</p> <p>Collecting plastics in separate bins and disposing in deep trench at designated area/s covering with soil</p> <p>Collecting cottons, clothes etc. at separate bins and burning in a pit (with sand bed)</p>	Contractor	PWD

Appendix F3**Environmentally Sensitive Areas for Particular Attention**

Sl No.	Name of the Road	Circle	Type of Forest and Name of the Forest/ Wild life Sanctuary	Section of the road passing through R.F/ P.F / Wild life Sanctuary	Section of the road passing adjacent to R.F/ P.F/ Wild life Sanctuary (but not passing through)
Ernakulam, Kottayam , Alappuzha & Pathanamthitta - Package – 01					
1					Nil
2					Nil

Notes:

1. Works shall not proceed in these areas without clearance from the Engineer.
2. N.A. – Not Applicable - No Approval required for proceeding with works.