

**Cochin Smart Mission Limited**



**Smart City**  
MISSION TRANSFORM-NATION

## **Bidding document**

**For**

**Development of Smart Roads in Ernakulam ABD Area under  
Smart City Mission, Kochi**

**MANAGING DIRECTOR**

**COCHIN SMART MISSION LIMITED (CSML)**

10<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi - 682 011,

India. PHONE: 0484-2350355

E-MAIL: [csmltenders@gmail.com](mailto:csmltenders@gmail.com)

**NOTICE INVITING TENDER (NIT)  
(NATIONAL COMPETITIVE BIDDING)**

Cochin Smart Mission Limited  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi - 682 011, India.  
Phone: 0484-2350355, 2380980  
E-mail: csmltenders@gmail.com

**No. CSML/ Smart Roads /RFP/003**

**Date: 14/02/2019**

Cochin Smart Mission Limited (CSML) invites online bids from eligible bidders through website [www.csml.co.in](http://www.csml.co.in), [www.kochimetro.org](http://www.kochimetro.org) and [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) - under organization name - "Kochi Metro Rail Ltd." for "**Development of Smart Roads in Ernakulam under Smart City Mission, Kochi**"

The revised details are as under.

Sl. No.	Event's Name	Information
1.	Organization	Cochin Smart Mission Limited (CSML)
2.	Project	Smart City Projects under Smart City Mission
3.	NIT No.	CSML/ Smart Roads /RFP/003
4.	Name of Work	Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi
5.	Time for Completion	15 months (including monsoon period)
6.	Form of Contract and Class of Contract	Open Tender Two Cover bidding (E- Tender) National Competitive Bidding
7.	Type of Tender	Item rate - BOQ based contract
8.	Tender document Fee	<b>Rs.59,000 (Rupees Fifty Nine Thousand Only)</b> through Online e-Tendering Payment Gateway ( <a href="https://etenders.kerala.gov.in">https://etenders.kerala.gov.in</a> ) only.
9.	Bid security / Earnest Money Deposit (EMD)	<b>Rs. 52.10 Lakh (Rupees Fifty Two Lakh Ten Thousand Only)</b> in the form of Bank guarantee issued by a scheduled commercial bank in India drawn in favour of Managing Director, CSML, payable at Kochi.  Validity of Bid security shall be 28 days beyond the Validity of Bids.  In case of Joint venture, Bid security shall be in the

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Sl. No.	Event's Name	Information
		name of the JVA that submits the bid.
10.	Bid Document Downloading Start Date	14 <sup>th</sup> February 2019
11.	Last date for sending pre-bid queries	21 <sup>st</sup> February 2019 till 17:00 hrs. at <a href="https://etenders.kerala.gov.in">https://etenders.kerala.gov.in</a> OR <a href="mailto:csmltenders@gmail.com">csmltenders@gmail.com</a>
12.	Date, Time & Place of Pre-bid Meeting	22 <sup>nd</sup> February 2019 at 15:00 hrs. Venue: Kochi Cochin Smart Mission Limited, 10 <sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi - 682 011, India.
13.	Last date for Online Purchase of Tender Document	06 <sup>th</sup> March 2019, till 17:30 hrs.
14.	Last date of Online Submission of Bids	06 <sup>th</sup> March 2019, till 17:30 hrs.
15.	Last date of submission of original EMD, Joint Venture Agreement and Power of Attorney (Hard copy)	08 <sup>th</sup> March 2019, till 14:00 hrs.
16.	Date & Time for Opening of Technical Bids	08 <sup>th</sup> March 2019, at 15:00 hrs.
17.	Date & Time for Opening of Financial Bids	Intimation later to the Technically qualified bidders as per <b>Clause 24.2 ITB</b>
18.	Bid Validity	180 days from the latest date of opening of Technical Bids
19.	Officer Inviting Bids	Managing Director, CSML
20.	Bid Clarification and Queries Addressed to	<a href="https://etenders.kerala.gov.in">https://etenders.kerala.gov.in</a> OR General Manager Email: <a href="mailto:csmltenders@gmail.com">csmltenders@gmail.com</a>

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**Managing Director  
Cochin Smart Mission Limited**

### e-Tender Submission Guidelines

1. The Bid should be submitted online at website <http://etenders.kerala.gov.in> by the due date and time, as specified in the NIT. Late/delayed tenders submitted online after the due date and time, for whatsoever reasons will not be considered. The Server Date & Time as appearing on the website. <http://etenders.kerala.gov.in> shall only be considered for the critical date and time of tenders. Offers sent through post, telegram, fax, telex, e-mail, courier will not be considered.
2. Partially completed/incomplete bids shall not be considered.
3. All communication shall be done online through website <http://etenders.kerala.gov.in> OR [csmltenders@gmail.com](mailto:csmltenders@gmail.com)
4. Bidders shall be required to arrange all resources, including Digital Signature Certificates and Internet Connections at their own cost, for participating in online tenders at <http://etenders.kerala.gov.in>.
5. M/s Cochin Smart Mission Limited (CSML) shall not be responsible for any delays what so ever in receiving as well as submitting offers, including connectivity issues. M/s. Cochin Smart Mission Limited (CSML) shall not be responsible for any other delays in submitting any documents wherever applicable.
6. M/s. Cochin Smart Mission Limited (CSML) will not be responsible for the cost incurred in preparation and submission of bids including the cost of digital certificate, regardless of the conduct of outcome of the bidding process.

### 7. Two cover system

If two bid systems is insisted, Bidders are required to submit offer in Two covers, namely

"Tender Submission Fee / EMD / Power of Attorney / Joint Venture Agreement / Prequalification including Technical Bid "-- **Cover - I**

And

"Financial Bid" ---**Cover -II**

### 8. Cover-I (Tender Submission Fee / EMD / Power of Attorney / Joint Venture Agreement / Prequalification including Technical Bid )

- a) **Tender Fee**-- To be paid online at <http://etenders.kerala.gov.in> only.
- b) **EMD** – To be paid in the form of Bank guarantee issued by a scheduled commercial bank in India in the format prescribed in RFP. The scanned copy of Bank Guarantee (EMD) to be uploaded in the e-tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). Original EMD to be submitted (in a sealed envelope mentioning name of work) in the Tender Box at the CSML office, 10<sup>th</sup> Floor, Revenue Towers, Park Avenue, Ernakulum – 682011 before due date and time for submissions of original EMD, Joint Venture Agreement and Power of Attorney (Hard copy) mentioned in NIT/ RFP/ Bidding document/ latest Corrigendum.
- c) **Power of Attorney (PoA) & Joint Venture Agreement** – to be scanned and uploaded in the e-tender website. Original PoA and JVA to be submitted (in a sealed envelope mentioning name of work) in the Tender Box at the CSML office, 10<sup>th</sup> Floor, Revenue Towers, Park Avenue, Ernakulum – 682011 before due date and time for submissions of original EMD, Joint Venture Agreement and Power of Attorney (Hard copy) mentioned in NIT/ RFP/ Bidding document/ latest Corrigendum.
- d) **Prequalification including Technical Bid**-- Bidders are requested to upload the scanned copies of the following details along with documents indicated in NIT/ RFP/ Bidding document/ latest Corrigendum "online".

- i) The scanned copy of the NIT/ Bidding document/ latest Corrigendum including Prebid Minutes and Addendum (if any) duly signed and stamped in all pages.
- ii) Notorized, Scanned copies of Prequalification / Technical Qualification supporting documents, signed scanned copies of various forms, Letter of Technical Bid, including Technical Bid.
- iii) All documents signed and scanned including GCC, SCC, Annexures to GCC, SCC as detailed in the Bidding document,

#### 9. Cover-II (Financial Bid )

- Bidders are requested to quote rates in the Finance cover (BOQ) only.
  - Price bid to be uploaded only in e-tender website: <http://etenders.kerala.gov.in>
  - PLEASE DO NOT QUOTE/MENTION RATES ANYWHERE ELSE IN THE TENDER OTHER THAN BOQ
  - In the Bid submitted by the bidder, if the prices or price bid are disclosed anywhereelse otherthan in the BOQ, the Bid / tender would be liable for disqualification and would summarily be rejected
10. In case if applicant does not hold any document, which need to be uploaded OR there is no need to upload the mentioned document please upload a scanned copy stating the reason for not uploading OR a blank sheet for proceeding with tendering. Provisions for uploading cannot be left blank.
  11. Please note that queries related to enquiry specifications, terms & conditions etc can be submitted to General Manager Email: [csmltenders@gmail.com](mailto:csmltenders@gmail.com) before the Last date & time for sending Pre-bid queries specified in the NIT.
  12. Tender opening will be done online at the time and dates specified in NIT/ RFP/ Bidding document/ latest Corrigendum.
  13. The bidders are requested to go through the instruction to the bidders in the website <http://etenders.kerala.gov.in>. The bidders who submit their bids for this tender after digitally signing using their Digital Signature Certificate (DSC), accept that they have clearly understood and agreed the terms and conditions in the website including the terms and conditions of this tender.
  14. In case of any querries on e-tender, Bidder may Contact below mentioned helpdesk

<b>e-tender helpdesk of Kerala IT Mission:</b>	<a href="tel:0484-2332262">Phone number : 0484-2332262</a>
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15. M/s. Cochin Smart Mission Limited (CSML) reserves the right to accept any offer in whole or in part or reject any or all offers without assigning any reason M/s Cochin Smart Mission Limited (CSML) reserves right to accept any or more offers in part. Decision of M/s. Cochin Smart Mission Limited (CSML) in this regard shall be final and binding on the bidder.
16. M/s. Cochin Smart Mission Limited (CSML) reserves the right to cancel any tender/ bidding process at any stage without assigning any reason.
17. Corrigendum / addendum, which form part of the tender document, shall be published in the e-tender website (<http://etenders.kerala.gov.in>) aswell as CSML website <http://csml.co.in/tenders> and bidders are advised to check the websites regularly for the updates related to the tender before submitting the Bid.

**Table of Contents**

<b>VOLUME-1</b> .....	<b>i</b>
Section I. Instructions to Bidders.....	1
Section II. Bid Data Sheet.....	37
Section III. Qualification Criteria.....	58
Section IV. Bidding Forms .....	76
Section V. Works Requirements / Employer’s Requirements & Technical Specifications .....	135
Section VI. General Conditions (GC).....	211
Section VII. Special Conditions (SC).....	305
Section VIII. Annex to Special Conditions –Contract Forms.....	321
Section IX. Drawings .....	329

# VOLUME-1

**VOLUME- 1 Includes**

- Section-I
- Section-II
- Section-III
- Section-IV
- Section-V
- Section-VI
- Section- VII
- Section- VIII
- Section- IX

**VOLUME- 2 Includes**

- Bill of Quantities(BOQ) .xls file (Part of Section IV)

**VOLUME- 3 Includes**

- Drawings .pdf file (Part of Section IX)



## Section I. Instructions to Bidders

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Section I. Instructions to Bidders

#### Table of Contents

<b>A. General</b>	<b>2</b>
1. Scope of Bid	2
2. Source of Funds	3
3. Eligible Bidders	3
4. Eligible Materials, Equipment, and Services	6
5. Qualification of the Bidder	6
6. One Bid per Bidder	8
7. Cost of bidding	8
8. Site Visit	8
<b>B. Bidding Documents</b>	<b>9</b>
9. Content of Bidding Documents	9
10. Clarification of Bidding Documents, Pre-Bid Meeting	11
11. Amendment of Bidding Documents	12
<b>C. Preparation of Bids</b>	<b>13</b>
12. Language of Bid	13
13. Documents Comprising the Bid	13
14. Letter of Technical Bid and Schedules	16
15. Alternative Bids	16
16. Bid Prices	16
17. Currencies of Bid and Payment	17
18. Bid Validity	18
19. Bid Security	18
20. Format and Signing of Bid	20
<b>D. Submission of Bids</b>	<b>21</b>
21. Submission of Bids	21
22. Deadline for Submission of Bids	21
23. Late Bids	21
24. Withdrawal, Substitution, and Modification of Bids	22
<b>E. Bid Opening And Evaluation</b>	<b>22</b>
25. Bid Opening- Technical Bids	22
26. Bid Opening- Financial Bids	23
27. Process to be Confidential	23
28. Clarification of Bids and Contacting the Employer	23
29. Deviations, Reservations, and Omissions	24
30. Determination of Responsiveness	24
31. Nonmaterial Nonconformities	25
32. Evaluation of Technical bids	26
33. Correction of Arithmetical Errors	27
34. Evaluation of Bids	28
35. Comparison of Bids	29
36. Qualification of the Bidder	29
37. Employer's Right to Accept Any Bid, and to Reject Any or All Bids	30
<b>F. Award of Contract</b>	<b>30</b>
38. Award Criteria	30
39. Notification of Award	30
40. Signing of Contract	31
41. Performance Security	32
42. Disputes Resolution Method	32
43. Fraud and Corruption	32

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Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Section I. Instructions to Bidders

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
<b>A. General</b>		
<b>1. Scope of Bid</b>	<b>1.1</b>	<p>The Procuring Entity / Employer, as defined in the <b>Bid Data Sheet (BDS)</b>, hereinafter called the "Employer" wishes to receive bids for the Works and Services identified in the <b>Bid Data Sheet</b> for the 'Development of Smart Roads in Ernakulam under Smart City Mission, Kochi' in the <b>Ernakulam Central area (Ward Number 62,66,67) of Ernakulam district in Kerala State.</b> The Contract will cover the service area indicated in the <b>Bid Data Sheet</b> and consisting of:</p> <p><b>The Contractor shall undertake</b></p> <ul style="list-style-type: none"><li>(a) Detailed investigations, surveys of various infrastructures mentioned below in the service area.</li><li>(b) Works related to development of urban Roads consisting of Smart roads, landscaping, streetscaping, pedestrian footpath, Junction improvement, Construction of minor bridges, Place making along the roads and beautification, provision of smart street furniture, creating and developing basic conveniences along the roads. Development with special focus on specially abled persons. Work will also include Development and remodeling of existing/ new Storm Water Drainage system taking remedial measures during the contract period and construction of foundations for electrical utilities. Details shall be as described in <b>Bid Data Sheet.</b></li><li>(c) Works to develop infrastructure for utility ducts on all important roads as decided by the SPV and as described in <b>Bid Data Sheet.</b></li><li>(d) Works related to all basic infrastructure facilities enabling to integrate the same with Command and control centre as described in <b>Bid Data Sheet.</b></li></ul> <p>The identification number of the Bidding are provided in the <b>BDS.</b></p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
	<b>1.2</b>	The successful bidder will be expected to carry out the Works and Services during the period stated in the <b>Bid Data Sheet (BDS)</b> .
	<b>1.3</b>	Throughout these Bidding Documents: <ul style="list-style-type: none"> <li>(a) the terms "bid", "tender" and "proposal" and their derivatives ("bidder / tenderer", "bid / tender", "tendered / proposed", "bidding / tendering", "bidding document / request for proposal / tender document", etc.) are synonymous</li> <li>(b) the term "in writing" means communicated in written form and delivered against receipt;</li> <li>(c) except where the context requires otherwise, words indicating the "singular" also include the "plural" and words indicating the "plural" also include the "singular"; and</li> <li>(d) "day" means calendar day.</li> </ul>
<b>2. Source of Funds</b>	<b>2.1</b>	The Implementing authority namely <b>Cochin Smart Mission Limited (CSML)</b> (hereinafter called "Authority" / "Department") <b>indicated in the BDS</b> will receive funding from Government of India and the State Government / Kochi Municipal Corporation for implementing projects under <b>Smart City Mission of Area Based Development of Kochi Smart city</b> toward the cost of the project <b>named in the BDS</b> . The Authority intends to apply a portion of the funds to eligible payments under the contract(s) for which these Bidding Documents are issued.
<b>3. Eligible Bidders</b>	<b>3.1</b>	This invitation to bid is open to any bidder (including all members of a joint venture and all subcontractors of a bidder) meeting all of the following requirements: <ul style="list-style-type: none"> <li>(a) A Bidder may be a natural person, private entity or any combination of such entities supported by an agreement in the form of a joint venture (JV). In the case of a JV:</li> <li>(b) A Bidder, and all partners constituting the Bidder, shall have the nationality of Employer's country A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen</li> </ul>

Contractor

Procuring Entity / Employer

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<u>Clause</u>	<u>Sub-Clause</u>	<u>Provision</u>
		<p>or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of Employer’s 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</p> <p>(c) A Bidder may be a natural person, private entity or any combination of such entities supported by an agreement in the form of a joint venture (JV).</p> <p>(d) In the case of a JV:</p> <ul style="list-style-type: none"> <li>i. unless otherwise specified in the <b>BDS</b>, all partners shall be jointly and severally liable, for the execution of the Contract in accordance with the Contract terms, and</li> <li>ii. The JV 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 JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.</li> </ul> <p>(e) A bidder shall not be affiliated with a firm or entity</p> <ul style="list-style-type: none"> <li>(i) that has provided consulting services related to the Works to either the Employer or the Authority during the preparatory stages of the Works or of the Project of which the Works form a part, or</li> <li>(ii) That has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager (Engineer) for the contract.</li> </ul> <p>(f) A bidder shall be <b>technically qualified</b> for the contract as notified by the Employer.</p>

Contractor

Procuring Entity / Employer

**Section I. Instructions to bidders**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
		(g) A bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices issued by the Employer.
	<b>3.2</b>	<p>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 :</p> <ul style="list-style-type: none"> <li>(a) they have at least one controlling partner in common; or</li> <li>(b) they receive or have received any direct or indirect subsidy from any of them; or</li> <li>(c) they have the same legal representative for purposes of this bid; or</li> <li>(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 Employer regarding this bidding process; or</li> <li>(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 such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or</li> <li>(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;</li> <li>(g) a Bidder or any of its affiliates has been hired (or is proposed to be hired) by the Employer or Borrower as Engineer for the Contract</li> </ul>

**Contractor**

**Procuring Entity / Employer**

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		implementation.
	<b>3.3</b>	Bidder Should not have failed in the last three (3) years to perform on any contract or been expelled from or abandoned any PWD, Government of Kerala work, any other State Government, Central Government or have any of their works rescinded for any reason. <b>(A declaration to this effect shall be furnished).</b>
	<b>3.4</b>	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.
	<b>3.5</b>	Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
<b>4. Eligible Materials, Equipment, and Services</b>		Deleted
<b>5. Qualification of the Bidder</b>	<b>5.1</b>	<p>Bidders shall, as part of their bid:</p> <ul style="list-style-type: none"> <li>(i) submit a written power of attorney authorizing the signatory of the bid to commit the bidder; and</li> <li>(ii) deleted</li> </ul> <p>As a minimum, bidders shall update the following information:</p> <ul style="list-style-type: none"> <li>(a) evidence of access to lines of credit and availability of other financial resources;</li> <li>(b) financial predictions for the current year and the two following years, including the effect of known commitments;</li> <li>(c) work commitments;</li> <li>(d) current litigation information; and</li> <li>(e) Availability of critical equipment.</li> </ul>
	<b>5.2</b>	Bids submitted by a joint venture of two or more firms

Contractor

Procuring Entity / Employer

**Section I. Instructions to bidders**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<b><i>Clause</i></b>	<b><i>Sub-Clause</i></b>	<b><i>Provision</i></b>
		<p>as partners shall comply with the following requirements:</p> <ul style="list-style-type: none"> <li>(a) the bid shall include all the information listed in <b>Sub-Clause 5.1 ITB</b> above;</li> <li>(b) the bid security, the bid, and in case of a successful bid, the Agreement, shall be signed so as to be legally binding on all partners;</li> <li>(c) one of the partners shall be nominated as being in charge, and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners;</li> <li>(d) the partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the Contract, including payment, shall be done exclusively with the partner in charge;</li> </ul>
		<ul style="list-style-type: none"> <li>(e) all partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the contract terms, and a statement to this effect shall be included in the authorization mentioned under (c) above, as well as in the bid and in the Agreement (in case of a successful bid); and</li> <li>(f) a copy of the Joint Venture Agreement entered into by all partners shall be submitted with the bid.</li> </ul> <p><b>5.3</b> Bidders shall also submit proposals of work methods and schedule in sufficient detail to demonstrate the adequacy of the bidders' proposals to meet the Technical Specifications and the completion time referred to in <b>Sub-Clause 1.2 ITB</b> above.</p>

**Contractor**

**Procuring Entity / Employer**



## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
<b>6. One Bid per Bidder</b>	<b>6.1</b>	A firm shall submit only one bid in the same bidding process, either individually as a bidder or as a partner in a joint venture. No firm can be a subcontractor while submitting a bid individually or as a partner of a joint venture in the same bidding process. A firm, if acting in the capacity of subcontractor in any bid, may participate in more than one bid, but only in that capacity. A bidder who submits or participates in more than one bid will cause all the proposals in which the bidder has participated to be disqualified.
<b>7. Cost of bidding</b>	<b>7.1</b>	The bidder shall bear all costs associated with the preparation and submission of his bid, and the Procuring entity / Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. Submission of a bid does not entitle the bidder to claim any cost and rights over AUTHORITY and AUTHORITY shall be at liberty to cancel any or all bids without giving any notice. All materials submitted by the bidder shall be the absolute property of AUTHORITY and no copyright etc. shall be entertained by AUTHORITY.
	<b>7.2</b>	Bidding document can be downloaded free of cost from the website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a> . RFP Document Fee / Bid Submission fee / Tender fee specified in <b>BDS</b> shall be paid through online e-Tendering Payment Gateway only ( <a href="https://etenders.kerala.gov.in">https://etenders.kerala.gov.in</a> ) for submission of bid. The RFP document fee / Bid submission Fee / Tender fee shall be non-refundable. Without the payment of Bid Fee, the bids will be taken as incomplete and non-responsive and shall not be considered.
<b>8. Site Visit</b>	<b>8.1</b>	The bidder is advised to visit and examine the areas / site of Works in which the Works / services of this contract shall be carried out and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the construction of the Works / services to be provided under the contract. The costs of visiting the Site shall be at the bidder's own expense.
	<b>8.2</b>	The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		premises and lands for the purpose of such visit, provided the Bidder gives AUTHORITY adequate notice of not less than 7 (Seven) days prior to such proposed visit. But only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the "Procuring entity" / "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.
	<b>8.3</b>	No site visits shall be arranged or scheduled after the deadline for the submission of the Bids and prior to the award of Contract.
<b>B. Bidding Documents</b>		
<b>9. Content of Bidding Documents</b>		<p><b>a.</b> The bidding documents are those stated below and should be read in conjunction with any Addenda issued in accordance with <b>Clause 11 ITB</b>:</p> <p><b>(ii) Technical bid (Volume 1 &amp; 2) Comprising of-</b></p> <p><b>Volume 1:</b></p> <p>(iii) Invitation for Bids / Notice Inviting Tender (NIT)</p> <p>(iv) <b>Section I.</b> Instructions to Bidders(ITB)</p> <p>(v) <b>Section II.</b> Bid Data Sheet (BDS)</p> <p>(vi) <b>Section III</b> Qualification Criteria</p> <p>(vii) <b>Section IV</b> Bidding Forms</p> <p>(viii) <b>Section V.</b> Employer's Requirements / Works requirements including Scope of work, Technical Specifications</p> <p>(ix) <b>Section VI.</b> General Conditions of Contract(GCC)</p> <p>(x) <b>Section VII.</b> <b>Special Conditions of Contract (SCC) / Contract Data</b></p> <p>(xi) <b>Section VIII.</b> Annex to Special Conditions- Contract Forms (Form of Agreement, Forms of Performance</p>

Contractor

Procuring Entity / Employer

**Section I. Instructions to bidders**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<b><i>Clause</i></b>	<b><i>Sub-Clause Provision</i></b>
	<p>Security, and Bank Guarantee for Advance Payment)</p> <p>(xii) <b>Section IX.</b> Drawings</p> <p><b><u>Volume 2:</u></b></p> <p>(xiii) Bill of Quantities (BOQ), Microsoft excel file (.xls format)</p> <p><b><u>Volume 3:</u></b></p> <p>(xiv) Drawings</p>
	<p><b>9.1</b> 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 Notice Inviting Tender (NIT) / Invitation for Bids.</p> <p><b>9.2</b> The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents. Failure to furnish all information or documentation required by the Bidding Documents may result in the rejection of the bid.</p> <p>Failure to comply with the requirements of this RFP / Bidding document may render the bid non-compliant and the Bid may be rejected.</p> <p>Bidders must:</p> <ul style="list-style-type: none"> <li>(a) Include all documentation specified in this RFP / Bidding document, in the bid</li> <li>(b) Follow the format of this RFP / Bidding document while developing the bid and respond to each element in the order as set out in this RFP / Bidding document</li> <li>(c) Comply with all requirements as set out within this RFP / Bidding document</li> </ul> <p>The Bidder shall be deemed to have carefully examined the Terms &amp; Conditions, Scope, Service Levels, Specifications, and Schedules of this RFP / Bidding document.</p> <p><i>The Bidder shall furnish through e-tendering all information or documentation required by the Bidding Documents.</i></p>

**Contractor**

**Procuring Entity / Employer**

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
<b>10. Clarification of Bidding Documents, Pre-Bid Meeting</b>	10.1	<p>A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing (hereinafter, the term "in writing" is deemed to include email and facsimile) at the "Procuring entity"s / "Employer"s e- mail address indicated in the <b>Bid Data Sheet</b> or raise their enquiries before the stipulated date for sending pre-bid queries for the pre-bid meeting if provided for in accordance with <b>Clause 11 ITB</b>.</p>
	10.2	<p>The "Procuring entity" / "Employer" will respond to any request for clarification that they receive before the stipulated last date and time ( indicated in NIT / RFP / Bidding document / Corrigendum -whichever is latest) for sending Pre-bid queries for the scheduled pre-bid meeting. Copies of the "Procuring entity" / "Employer"s response will be published on e-Tendering Portal as indicated in <b>BDS</b>, i.e. <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>, including a description of the inquiry but without identifying its source. Should the clarification result in changes to the essential elements of the Bidding Documents, the "Procuring entity" / "Employer" shall amend the Bidding Documents following the procedure under <b>Clause 11 ITB</b> and <b>Sub-Clause 22.2 ITB</b> at their discretion.</p>
	10.3	<p>The Bidder's designated representative is invited to attend a pre-bid meeting on the stipulated date and time (indicated in NIT / RFP / Bidding document / Corrigendum -whichever is latest) <b>if provided for in the BDS</b>. The representatives, limited to 3, of the interested organizations may attend the pre-bid meeting at their own cost. The purpose of the meeting is to provide bidders with information regarding the RFP / Bidding document and the proposed works / service requirements in reference to the RFP / Bidding document and to clarify issues and to answer questions on any matter that may be raised at that stage. Pre-Bid meeting will also provide each bidder with an opportunity to seek clarifications regarding any aspect of the RFP / Bidding document and the project.</p>
	10.4	<p>All Bidders shall e-mail their queries to <a href="mailto:csmltenders@gmail.com">csmltenders@gmail.com</a> in the format of <b>"Form Pre-Bid"</b> as prescribed in <b>Section IV Bidding Forms</b> to reach the Employer before the stipulated date for sending pre-bid queries. Queries received beyond stipulated last date and time will not be considered.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause Provision</b>
	<p>10.5 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 published on e-Tendering Portal i.e. <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>. No telephonic / queries will be entertained thereafter. This response of AUTHORITY shall become integral part of RFP / Bidding document. AUTHORITY shall not make any warranty as to the accuracy and completeness of responses. 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 <b>Clause 11 ITB</b>.</p>
	<p>10.6 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.</p> <p>10.7 AUTHORITY shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, AUTHORITY reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring AUTHORITY to respond to any question or to provide any clarification especially to those queries which were received beyond the stipulated last date for sending Pre-Bid queries.</p> <p>10.8 AUTHORITY may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. It may issue supplements to this RFP/ bidding document. Any such corrigendum shall be deemed to be incorporated by this reference into this RFP / Bidding document. All clarifications and interpretations issued by AUTHORITY shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by AUTHORITY or its employees or representatives shall not in any way or manner be binding on AUTHORITY.</p>
<b>11. Amendment of Bidding Documents</b>	<p>11.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Documents by issuing addenda.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
	11.2	<p>Any addendum thus issued shall be part of the Bidding Documents pursuant to <b>Sub-Clause 9.1 ITB</b>. All the Corrigendum / Addendum made in the document would be published on the e-Tendering Portal i.e. <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a> and shall be part of RFP / Bidding document.</p> <p>The Bidders are advised to visit the e-tendering portal (<a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>) on regular basis to check for necessary updates. AUTHORITY also reserves the right to amend the dates mentioned in this RFP / Bidding document.</p>
	11.3	<p>To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for the submission of bids at its discretion, pursuant to <b>Sub-Clause 22.2 ITB</b>.</p>
<b>C. Preparation of Bids</b>		
<b>12. Language of Bid</b>	12.1	<p>The bid, and all correspondence and documents related to the bid exchanged by the bidder and the Employer shall be written in the bid language stipulated in the <b>Bid Data Sheet (BDS)</b>. Supporting documents and printed literature furnished by the bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the above stated language, in which case, for purposes of interpretation of the bid, the translation shall prevail/govern.</p>
<b>13. Documents Comprising the Bid</b>	13.1	<p><b>The bid submitted by the bidder shall comprise the following:</b></p> <p><b>(A) Technical bid which contains the following parts in the following order:</b></p> <ul style="list-style-type: none"> <li>(i) Letter of Technical Bid</li> <li>(ii) <b>Part I</b> - the information required to be furnished as part of Technical Proposal as indicated in <b>Clause 13.2;</b></li> <li>(iii) <b>Part II</b> - the Bid Security; in accordance with <b>ITB 19;</b></li> </ul>

Contractor

Procuring Entity / Employer

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause Provision</b>
	<ul style="list-style-type: none"> <li>(iv) <b>Part III</b> - where applicable, the joint venture agreement - documents required by <b>Clause 13.3;</b></li> <li>(v) <b>Part IV</b> - a written power of attorney demonstrating the authority of the person or persons signing the Proposal to bind the Bidder in accordance with <b>ITB 20.2;</b></li> <li>(vi) <b>Part V</b> - optional, pre-printed literature (required if any); and</li> <li>(vii) the duly filled-in <b>Letter of Technical Bid / Form of Bid;</b></li> <li>(viii) the <b>Appendix to Bid- Schedule of Adjustment data</b></li> </ul> <p><b>(B) the Financial Bid which consists of:</b></p> <ul style="list-style-type: none"> <li>(i) Duly Completed- priced Bill of Quantities</li> </ul> <p>Any other document required in the <b>BDS.</b></p>
	<p><b>13.2 Part I of the Technical bid shall consist of the following sub-parts in the following order:</b></p> <ul style="list-style-type: none"> <li>(i) a detailed "<b>Methodology</b>" setting out the manner in which the Bidder proposes to carry out the Works and Services;</li> <li>(ii) a detailed "<b>work plan</b>" and "<b>time schedule</b>" for all Works and Services;</li> <li>(iii) a concept for transfer of technology and <b>training of the Employer's staff</b> during the last year of the contract</li> <li>(iv) supporting documentation and technical specifications of all <b>materials and equipment specified in Part F</b> of the Technical Specifications</li> <li>(v) a detailed "<b>Staffing Plan</b>" setting out the Bidder's proposed staffing arrangements;</li> <li>(vi) a description of how the Bidder will work with local contractor(s)</li> <li>(vii) a table entitled "<b>Summary of Staff</b></li> </ul>

Contractor

Procuring Entity / Employer

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
		<p><b>Qualification</b>” setting out all proposed positions for Key Staff and the qualifications, years of experience and areas of expertise for each of the proposed positions;</p> <p>(viii) a section entitled <b>“Curriculum Vitae”</b> which contains the signed curriculum vitae for each of the Key Staff; and</p> <p>(ix) optional: any other information that may be required</p>
	<p>13.3</p> <p>13.4</p>	<p>Each Joint Venture Bidder shall submit, as <b>Part III</b> of the Technical Bid, a written commitment, in the form of a letter duly executed by an authorized officer of each joint venture participant, which,</p> <p>(a) confirms each joint venture participant’s commitment to the joint venture and acceptance of the joint venture arrangements described in the Proposal;</p> <p>(b) confirms each joint venture participant’s willingness to provide a joint and several guarantee to the Client to underwrite the performance of the joint venture in respect of the Contract; and</p> <p>(c) identifies which joint venture participant,</p> <p>(i) will assume the leading role on behalf of the other joint venture participants; and</p> <p>(ii) will have the authority to commit all joint venture participants</p> <p>In addition to the requirements under <b>Sub-Clause 11.1 ITB</b>, bids submitted by a JVA shall include a copy of the Joint Venture Agreement entered into by all partners. Joint Venture Agreement shall be signed by all partners and submitted with the bid,</p> <p><i>The Bidder shall upload through e-tendering a Technical Proposal / Technical bid as detailed above.</i></p>

Contractor

Procuring Entity / Employer



## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
<b>14. Letter of Technical Bid and Schedules</b>	14.1	The Letter of Technical Bid and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in this RFP / Bidding document. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under <b>Sub-Clause 20.2 ITB</b> . All blank spaces shall be filled in with the information requested.
<b>15. Alternative Bids</b>	15.1	Bidders shall prepare their bids in accordance with the bidding document. <b>Unless otherwise indicated in the BDS</b> , alternative bids <b>shall not be</b> considered during bid evaluation, except if so indicated in the <b>Bid Data Sheet</b> .
	15.2	When alternative times for completion are explicitly invited, a statement to that effect <b>will be included in the Bid Data Sheet</b> , as will the method of evaluating different times for completion.
	15.3	Except as provided under <b>Sub-Clause ITB 15.4</b> below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Documents must first price the Employer's design as described in the Bidding Documents 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.
	15.4	<b>When specified in the BDS</b> , Bidders are permitted to submit alternative technical solutions for specified parts of the Works, and such parts <b>will be identified in the Bid Data Sheet</b> , as will the method for their evaluating, and described in <b>Section V, Works Requirements / Employer's Requirements</b> .
<b>16. Bid Prices</b>	16.1	Entire works and services as described in <b>Sub-Clause 1.1</b> shall be based on a Performance Fee. All services are paid for each item of work specified as per the unit rates in the Bill of Quantities (BOQ).
	16.2	The prices quoted by the Bidder in the Bill of Quantities

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		<p>shall conform to the requirements specified below.</p> <p>(i) The Bidder shall fill in rates and prices for all items of the Works described in the Bill 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 Bill of Quantities.</p> <p><i>The Bidder shall fill in unit rates in figures for all items of the Works described in the Bill of Quantities. The system will automatically convert the unit rates mentioned in figures to words and also calculate the amount of that item as well as the total Bid value.</i></p> <p>(ii) The price quoted in the Price bid ie. Bill of quantities shall be the total price of the bid.</p> <p>16.3 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the bidder.</p>
	16.4	<p>Except if the <b>Bid Data Sheet</b> defines the contrary, the 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. The bidder shall furnish the indices and weightings for the price adjustment formulae in the "<b>Appendix to Bid-Schedule of Adjustment data</b>" in the prescribed format included in <b>Section IV Bidding Forms</b>, and shall submit with its bid such other supporting information as required under the Conditions of Contract. The Employer may require the bidder to justify its proposed weightings.</p> <p><i>The Bidder shall furnish the weightings through e-tendering, for the price adjustment formulae in the "<b>Appendix to Bid- Schedule of Adjustment Data</b>". If the same is not furnished it will be deemed as null and void and Contractor shall not claim for the same.</i></p>
<b>17. Currencies of Bid and Payment</b>	17.1	<p>The currency (ies) of the bid and the currency(ies) of payments shall be <b>as specified in the BDS</b>.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><i>Clause</i></b>	<b><i>Sub-Clause</i></b>	<b><i>Provision</i></b>
<b>18. Bid Validity</b>	18.1	Bids shall remain valid for the period <b>specified in the BDS</b> from the latest Technical bid opening date prescribed by the Employer in accordance with <b>Sub-Clause 22.1 ITB</b> . A bid valid for a shorter period shall be rejected by the Employer as non responsive.
	18.2	In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request Bidders to extend the period of validity of their bids for a specified additional period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting its bid security. A bidder agreeing to the request will not be required or permitted to modify its bid, but will be required to extend the validity of its bid for the requested period and also shall extend bid security validity for twenty-eight (28) days beyond the deadline of the extended validity period and in compliance with <b>Clause 19 ITB</b> in all respects.
<b>19. Bid Security</b>	19.1	The Bidder shall furnish as part of its bid, a bid security <b>as specified in the BDS</b> , in original form and, in the case of a bid security, in the amount and currency <b>specified in the Bid Data Sheet (BDS)</b> .
	19.2	If a bid security is specified pursuant to <b>Sub-Clause 19.1 ITB</b> , <ul style="list-style-type: none"> <li>(i) The bid security shall be substantially in accordance with forms <b>as specified in the Bid Data Sheet (BDS)</b>. Out of various forms specified in <b>BDS</b>, at the Bidder's option, the same shall be provided in one of the form. Prescribed Forms / Format of bid security included in <b>Section IV Bidding Forms</b>.</li> <li>(ii) The bid security shall be valid for <b>twenty-eight (28) days beyond the original validity period of the bids</b>. <b>Further</b>, if requested under <b>Sub-Clause 18.2 ITB</b>, should be valid <b>twenty-eight (28) days beyond the extended validity period of the bids</b></li> <li>(iii) be payable promptly upon written demand by the employer in case any of the conditions listed in <b>Sub-Clause 19.7</b></li> </ul>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause Provision</b>
	<p><b>ITB</b> are invoked;</p> <p>(iv) be submitted in its original form; copies will not be accepted;</p> <p>(v) The Bid submitted without Bid Security /EMD (Earnest Money Deposit) , mentioned above, will be summarily rejected</p> <p>19.3 <b>The bid security of a Joint Venture Bidder shall be in the name of the JVA that submits the bid so as to commit fully all partners to the joint venture.</b> Any bid not accompanied by an acceptable bid security as indicated for JV shall be rejected by the Employer as non responsive.</p> <p>19.4 If a bid security is specified pursuant to <b>Sub-Clause 19.1 ITB</b>, any bid not accompanied by an acceptable bid security shall be rejected by the Employer as non responsive.</p>
	<p>19.5 If a bid security is specified pursuant to <b>Sub-Clause 19.1 ITB</b>, 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 <b>Clause 41 ITB</b>.</p> <p>19.6 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.</p> <p>19.7 The bid security may be forfeited:</p> <p>(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Technical Bid except as provided in <b>Clause 24 ITB</b> or</p> <p>(b) If a Bidder increases his quoted prices during the period of bid validity or its extended period, if any.</p> <p>(c) If during the bid process, a bidder indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b> <b><u>Provision</u></b>
	<p>(d) If, during the bid process, any information is found false / fraudulent / mala-fide, and then AUTHORITY shall reject the bid and, if necessary, initiate action as per applicable provisions.</p> <p>(e) If the bidder does not agree to correct arithmetic error.</p> <p>(f) if the successful Bidder fails to:</p> <p style="padding-left: 40px;">(i) sign the Contract in accordance with <b>Clause 40 ITB</b>; or</p> <p style="padding-left: 40px;">(ii) Furnish required performance security in accordance with <b>Clause 41 ITB</b>.</p> <p>The decision of AUTHORITY regarding forfeiture of the EMD / Bid security shall be final and binding upon bidders.</p>
<p><b>20. Format and Signing of Bid</b></p>	<p>20.1 The entire Bid shall be submitted strictly as per the format specified in this RFP / Bidding document. Bids with any deviation from the prescribed format are liable for rejection. The Bidder shall prepare the documents comprising the bid as described in <b>BDS</b>.</p> <p>20.2 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 <b>as specified in the BDS</b> 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.</p> <p>20.3 The bid shall contain no alterations, omissions, or additions, unless such corrections are initialed by the person or persons signing the bid.</p> <p>20.4 A bid submitted by a JVA shall comply with the following requirements:</p> <p style="padding-left: 40px;">(a) be signed so as to be legally binding on all partners and</p> <p style="padding-left: 40px;">(b) Include the Representatives's authorization consisting of a power of attorney signed by those legally authorized to sign on behalf of the JVA.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
	20.5	Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the authorized person signing the bid.
<b>D. Submission of Bids</b>		
<b>21. Submission of Bids</b>	21.1	Complete bidding process will be online (e-Tendering) in two covers system. Submission of bids shall be in accordance to the instructions given in the <b>Bid Data Sheet (BDS)</b> .
<b>22. Deadline for Submission of Bids</b>	22.1	Bids must be received by the Employer at the address and no later than the date and time <b>indicated in the BDS</b> . <b>When so specified in the BDS</b> , bidders shall submit their bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures <b>specified in the BDS</b> .
	22.2	The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with <b>Sub-Clause 11 ITB</b> , 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.
<b>23. Late Bids</b>	23.1	Bids received after the due date and the specified time (including the extended period if any) for any reason whatsoever, shall not be considered and shall not be opened in the e-Tendering system. The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with <b>Clause 22 ITB</b> . Any bid received by the Employer after the deadline for submission of bids shall be rejected, and returned unopened to the Bidder.  <i>The software of e-tendering system will not allow the Bidder to upload the documents after expiration of the stipulated date &amp; time of Bid submission. The Bidder shall refer the server time, which will be displayed in the e-tender website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>. Employer will not be responsible for non-receipt of bids on the stipulated date &amp; time prescribed in <b>Clause 22.1 ITB</b>, due to Internet Problems, improper uploading or any other related problems. In case of connectivity problems, Bidder may contact Helpdesk of the e-tender service provider and may also draw the</i>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		<i>attention of tender inviting authority.</i>
<b>24. Withdrawal, Substitution, and Modification of Bids</b>	<b>24.1</b>	No bid shall be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the validity period specified by the Bidder on the Letter of Technical Bid or any extension thereof. Entire Bid security / EMD shall be forfeited if any of the Bidders withdraw their bid during the validity period.
<b>E. Bid Opening And Evaluation</b>		
<b>25. Bid Opening- Technical Bids</b>	<b>25.1</b>	The Employer shall open the Technical bids in public, in the presence of Bidders` designated representatives and anyone who choose to attend, and at the address, date and time <b>specified in the BDS</b> . Electronic bid opening will be carried out first. The bidders` representatives who are present during Technical bid opening shall sign a register evidencing their attendance. The prescribed original documents specified and submitted in hard copy will be opened and signed by authorized representatives of Employer.
	<b>25.2</b>	The Employer shall announce the Bidders` names at the opening of the Technical bid as well as whether the Bid Security (EMD) is contained in the Bidder`s Technical Bid. The Financial Bid of all Proposals shall remain unopened until Technical bids are evaluated for fulfillment of qualification criterias until financial bids are opened in accordance with <b>Clause 26 ITB</b> . No bid shall be rejected at bid- opening except for late bids pursuant to <b>Clause 23 ITB</b> .
	<b>25.3</b>	Only bids that are opened and read out at bid opening shall be considered further.
	<b>25.4</b>	The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with <b>Sub-Clause 25.2 ITB</b> .
	<b>25.5</b>	Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
<b>26. Bid Opening- Financial Bids</b>	<b>26.1</b>	After the evaluation of the Technical Bids, the Employer shall determine a date and time on when the Employer shall open the Financial Bids of the Substantially Responsive Bidders and shall, <ul style="list-style-type: none"> <li>(a) notify the Bidders of the date and time of the opening of the Financial Bids online;</li> <li>(b) carry out the opening of the Financial Bids of the Qualified Bidders and the announcement of the Qualified Bidders' names and quoted prices in the presence of the Bidder's representatives who choose to attend the Financial bid opening; and</li> <li>(c) Financial Bid of the Bidders who failed to comply with the technical requirements will remain unopened.</li> </ul>
	<b>26.2</b>	Bidders' representatives who attend the opening of the Financial Bids shall sign a register to record their attendance.
	<b>26.3</b>	The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with Sub-Clause
<b>27. Process to be Confidential</b>	<b>27.1</b>	Information relating to the examination, clarification, evaluation, and comparison of bids, and recommendations for the award of a contract, shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced.
	<b>27.2</b>	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. Information on Contract award will be published on e-tender portal.
<b>28. Clarification of Bids and Contacting the Employer</b>	<b>28.1</b>	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

Contractor

Procuring Entity / Employer



## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with <b>Clause 31 ITB</b> .
	28.2	If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.
	28.3	Notwithstanding <b>Sub-Clause 27.2 ITB</b> , 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.
<b>29. Deviations, Reservations, and Omissions</b>	<b>29.1</b>	<p>During the evaluation of bids, the following definitions apply:</p> <ul style="list-style-type: none"> <li>(a) <b>"Deviation"</b> is a departure from the requirements specified in the Bidding Document;</li> <li>(b) <b>"Reservation"</b> is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and</li> <li>(c) <b>"Omission"</b> is the failure to submit part or all of the information or documentation required in the Bidding Document.</li> </ul>
<b>30. Determination of Responsiveness</b>	30.1	The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in <b>Clause 13 ITB</b> . Further the general conditions leading to disqualification of the Bid are <b>as specified in the BDS</b> .

Contractor

Procuring Entity / Employer

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause Provision</b>
	<p>30.2 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,</p> <ul style="list-style-type: none"> <li>(a) if accepted, would                             <ul style="list-style-type: none"> <li>(i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or</li> <li>(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</li> </ul> </li> <li>(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.</li> </ul> <p>30.3 The Employer shall examine the technical aspects of the bid submitted in accordance with <b>Clause 13 ITB</b>. Technical Proposal, in particular, to confirm that all requirements of <b>Section V Employer’s requirements / Works Requirements</b> have been met without any material deviation, reservation or omission.</p> <p>30.4 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.</p>
<p><b>31. Nonmaterial Nonconformities</b></p>	<p><b>31.1</b> 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.</p> <p><b>31.2</b> 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</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><i>Clause</i></b>	<b><i>Sub-Clause</i></b>	<b><i>Provision</i></b>
		the Bidder to comply with the request may result in the rejection of its bid.
<b>32. Evaluation of Technical bids</b>	32.1	<p>The Employer will evaluate the Technical bids received prior to the Submission Deadline and opened in accordance with <b>Clause 25 ITB</b> in accordance with the following process:</p> <ul style="list-style-type: none"> <li>(a) prior to the detailed evaluation of bids, the Employer will determine whether each Technical bid (a) meets the eligibility criteria stipulated in the RFP/ bidding document (b) has been properly signed; (c) is accompanied by the required securities;</li> <li>(b) the Employer will examine each Technical bid submitted to determine whether the Technical bid is complete and Substantially Responsive to the Bidding Documents;</li> <li>(c) the Employer will evaluate the Technical bids based on the evaluation criteria provided in the <b>Bidding Data Sheet</b>. The use of other criteria shall not be permitted. The Employer reserves the right to waive minor deviations in the evaluation criteria if they do not materially affect the successful implementation of the contract. The Technical bids that have met the evaluation criteria will be considered as Substantially Responsive Bids.</li> </ul>
	32.2	<p>A substantially responsive bid is one that conforms to all the terms, conditions, and specifications of the bidding documents without material deviation or reservation. A material deviation or reservation is one (a) that affects in any substantial way the scope, quality, or performance of the Works and Services; (b) that limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the bidder's obligations under the contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
	32.3	If a bid is not substantially responsive, it will not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation and will not be considered for evaluation further.
	32.4	Only Technical bids that pass all evaluation criteria shall be determined as "substantially responsive bids" and be considered for financial evaluation.
	32.5	Technical bids failing to meet the evaluation criteria shall not be considered further in the evaluation process and their financial proposals shall be returned unopened
<b>33. Correction of Arithmetical Errors</b>	33.1	The Employer shall open the Financial Bids of the Substantially Responsive Bidders ie. technically qualified bids, in accordance with <b>Clause 26 ITB</b> . The Employer shall examine each such Financial Bid to determine whether it is complete and responsive to the Bidding Documents.
	33.2	<p>Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:</p> <p>(a) if there is a discrepancy between the unit price and the total price for the line item that is obtained by multiplying the unit price and quantity, the unit price as quoted 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;</p> <p><i>Once the Bidder key in the rates in figures, in the Bill Of Quantities provided, rate in words will be auto generated by the system.</i></p> <p>(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</p>

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		<p><i>Once the Bidder key in the rates in figures, in the Bill of quantities provided, the system will automatically calculate the amount of that item as well as the total Bid value.</i></p> <p>(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.</p> <p>33.3 The amount stated in the bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited in accordance with <b>Sub-Clause 19.7 (e)</b>.</p>
<b>34. Evaluation of Bids</b>	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	The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with <b>Sub-Clause 33.1 ITB</b> .
	34.3	<p>To evaluate a bid, the Employer shall consider the following:</p> <p>(a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities,;</p> <p>(b) making correction of arithmetic errors in accordance with <b>Sub-Clause 33.1 ITB</b> ;</p> <p>(c) the evaluation factors indicated in <b>BDS</b> and <b>Section III, Qualification Criteria</b>;</p>
	34.4	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.

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
	34.5	If the bid, which results in the lowest Evaluated Bid Price, is seriously unbalanced in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, 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.
<b>35. Comparison of Bids</b>	35.1	The Employer shall compare all substantially responsive bids in accordance with <b>Clause 34 ITB</b> to determine the lowest evaluated bid.
<b>36. Qualification of the Bidder</b>	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 either meets the qualifying criteria specified in <b>Section III Qualification Criteria</b> .
	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 <b>Clause 13 ITB</b> .
	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.

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
<b>37. Employer's Right to Accept Any Bid, and to Reject Any or All Bids</b>	37.1	The AUTHORITY / 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 Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for AUTHORITY's action.
	37.2	In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.
	37.3	<b>Non Exclusive:</b> AUTHORITY reserves the rights to avail the similar services from other Service Providers/ others during the Contract period.
	37.4	Failure of the successful bidder to agree with the Terms & Conditions of the Bidding document / RFP shall constitute sufficient grounds for the annulment of the award, in which event AUTHORITY may invite the next best bidder for negotiations or may call for fresh Bidding document / RFP.
<b>F. Award of Contract</b>		
<b>38. Award Criteria</b>	38.1	Subject to <b>Sub-Clause 37.1 ITB</b> , the Employer shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid <b>inclusive of all taxes such as GST</b> etc and is substantially responsive to the Bidding Document pursuant to <b>Clause 34 ITB</b> , provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
<b>39. Notification of Award</b>	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

Contractor

Procuring Entity / Employer

## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		Contract.
	39.3	Upon the successful bidder's furnishing of the performance security pursuant to <b>Clause 41 ITB</b> , the Employer will promptly notify on the website of Authority / e-tender website mentioned in <b>Bid data sheet</b> , the name of the winning bidder to each unsuccessful bidder and will discharge the bid security of the unsuccessful bidders, pursuant to <b>Clause 19 ITB</b> .
	39.4	The Employer shall publish in Authority / e-tender website mentioned in <b>Bid data sheet</b> of the results of the bidding and shall publish the results identifying the bid and the following information: <ul style="list-style-type: none"> <li>(i) name of each Bidder who submitted a Bid;</li> <li>(ii) bid prices as read out at Bid Opening;</li> <li>(iii) name and evaluated prices of each Bid that was evaluated;</li> <li>(iv) name of bidders whose bids were rejected and the reasons for their rejection; and</li> <li>(v) Name of the successful Bidder, and the Price it offered, as well as the duration and summary scope of the contract awarded.</li> </ul>
	39.5	The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with <b>Sub-clause 39.1 ITB</b> , requests in writing the grounds on which its bid was not selected.
<b>40. Signing of Contract</b>	40.1	At the same time that the Employer notifies the successful bidder that its bid has been accepted, Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement in the form provided in the bidding documents, incorporating all agreements between the parties.
	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 together with the required performance security including additional performance security towards unbalanced rates quoted by the bidder.

Contractor

Procuring Entity / Employer



## Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
	40.3	Upon fulfillment of <b>Sub-Clause 39.2</b> , the Employer will promptly notify the other bidders that their bids have been unsuccessful and their bid security will be returned as promptly as possible, in accordance with <b>Clause 19 ITB</b> .
<b>41. Performance Security</b>	41.1	Within twenty-eight (28) days of the receipt of notification of award / Letter of Acceptance from the Employer, the successful Bidder shall furnish to the Employer the performance security in the form stipulated in the <b>Bid data sheet</b> and in accordance with the General Conditions of Contract, using for that purpose the Performance Security Form included in <b>Section VIII, Annex to the Special Conditions - Contract Forms</b> .
	41.2	If it is stipulated in the <b>Bid Data Sheet (BDS)</b> that the performance security is to be provided by the successful bidder in the form of a bank guarantee, it shall be issued either (a) at the bidder's option, by a bank located in the country of the Employer
	41.3	Failure of the successful Bidder to submit the above-mentioned Performance Security-to comply with the requirements of <b>Clauses 40 or 41 ITB</b> or sign the Contract shall constitute a breach of Contract and 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.
<b>42. Disputes Resolution Method</b>	42.1	The disputes resolution method (i.e., the Disputes Resolution Board or the Disputes Resolution Expert) is indicated in the <b>Bid Data Sheet</b> . The Employer and the successful bidder will select Disputes Resolution Board members or the Disputes Resolution Expert, as the case may be, according to the procedure set forth in the Conditions of Contract.
<b>43. Fraud and Corruption</b>	43.1	The Employer requires that beneficiaries as well as bidders, suppliers, and contractors and their subcontractors under this contracts, observe the

Contractor

Procuring Entity / Employer

Section I. Instructions to bidders

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Clause</b>	<b>Sub-Clause</b>	<b>Provision</b>
		<p>highest standard of ethics during the procurement and execution of such contracts. <sup>1</sup> In pursuance of this policy, the Employer :</p> <p><b>(a)</b> defines, for the purposes of this provision, the terms set forth below as follows:</p>
	(i)	<p>“corrupt practice” means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;</p>
	(ii)	<p>“<b>fraudulent practice</b>”<sup>2</sup> means 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;</p>
	(iii)	<p>“<b>collusive practice</b>”<sup>3</sup> means an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;</p>
	(iv)	<p>“<b>coercive practice</b>”<sup>4</sup> means 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;</p>
	(v)	<p>“<b>obstructive practice</b>” is</p> <p>(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede Authority’s investigation into</p>

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

<sup>4</sup> a “party” refers to a participant in the procurement process or contract execution.

Contractor

Procuring Entity / Employer

**Section I. Instructions to bidders**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<b><u>Clause</u></b>	<b><u>Sub-Clause</u></b>	<b><u>Provision</u></b>
		<p>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</p> <p>(bb) acts intended to materially impede the exercise of the Authority's inspection and audit rights provided for under sub-clause below.</p>
	<b>(b)</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, coercive or obstructive practices in competing for the contract in question;
	<b>(c)</b>	will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded if it at any time determines that they have, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, the contract.



## Section II. Bid Data Sheet



## Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

## Section II. Bid Data Sheet

<b>A. General</b>	
<b>ITB 1.1</b>	The number of the Notice inviting Tender(NIT) / Invitation for Bids (IFB) is : <b><u>CSML / Smart Road / RFP / 003</u></b> <b><u>Date: 13/02/2019</u></b>
<b>ITB 1.1</b>	The Employer / Procuring Entity is: <b><u>Managing Director, Cochin Smart Mission Limited (CSML) Kochi, Kerala</u></b>
<b>ITB 1.1</b>	<p>The name of the Work is: <b><u>Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi</u></b></p> <p>The Contract will cover the service area: <b><u>includes areas coming under Area based development In Ernakulam Central (Ward Number 62, 66, 67) of Kochi Smart city. The same is earmarked in Key map and detailed in Section V.</u></b></p> <p>The identification number of the Bid is: <b><u>CSML / Smart Road / RFP / 003</u></b> <b><u>Date: 13/02/2019</u></b></p>
<b>ITB 1.1</b>	<p><b>Broad Summary of the Works, Services to be provided are indicated below:</b></p> <p><b>However, for detailed scope of work refer Section V Employer's requirements / Works requirements</b></p> <p>The works and services to be provided for the Integrated Infrastructure Project broadly include Detailed investigation and surveys of various infrastructures mentioned below in the service area including development of Smart Roads, , Utility Ducts and Storm Water Drainage includes:</p>
	<p>(i) Development of urban Roads, consisting of Smart roads, Construction of minor bridges, landscaping, street scaping, pedestrian footpath, Junction improvement, Place making along the roads and beautification provision of smart street furniture, creating and developing basic conveniences along the roads. Development with special focus on specially abled persons. Work will also include Development and remodeling of existing/new Storm Water Drainage system with due care to avoid water stagnation including taking remedial measures during the contract period. Foundations of electrical utilities are also part of the scope of work.</p>

Contractor

Procuring Entity / Employer

## Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

	<p>(ii) Works to develop infrastructure for utility ducts on all important roads as decided by the SPV for basic services like Water supply, Telecom and electric cables.</p> <p>(iii) Works related to all basic infrastructure facilities enabling with compatibility to integrate the same with Command and control centre proposed to be managed by an MSI</p> <p>(iv) Training of user department after its execution.</p>
<b>ITB 1.1(a)</b>	<p><u>Investigations, Survey, and Drawings:</u></p> <p>The scope of work for Contractor includes carrying out comprehensive soil investigations, carrying out detailed level survey of the existing road infrastructure including storm water drainage system in the service area. This shall include but not be limited to assessing the condition and performance of existing assets. This contract involves Construction, testing Commissioning of infrastructures as detailed in <b>Section V</b>, Supply, and Installation testing Commissioning of various components under the Scope of Contract. The Contractor will undertake comprehensive soil investigations, carrying out detailed level survey, prepare working drawings /shop drawings for all the components. Only after the Approval of the Good For Construction drawings approved by the Engineer-In-Charge, works shall commence.</p>

<p><b>ITB 1.1(b)</b></p>	<p><u>Smart Roads, Streetscapes and Storm Water Drains:</u></p> <p>The scope of work for smart roads and landscaping / streetscaping includes</p> <ul style="list-style-type: none"> <li>(i) Development and conducting of road inventories, necessary surveys and analysis (geotechnical, topographical)</li> <li>(ii) Development of roads and junctions as per survey analysis, and complete street design guidelines and universal accessibility principles,</li> <li>(iii) Construction of a minor bridge at Abraham madamakal road</li> <li>(iv) Development of smart street features including attractive street furniture,</li> <li>(v) Providing landscaping and street art/murals</li> <li>(vi) Provision and design of street vending spaces</li> <li>(vii) Development of parking spaces for vehicles, non-motorized transport and IPT modes</li> <li>(viii) Plan and design of place-making at junctions and footpaths (where RoW allows)</li> <li>(ix) Rehabilitation and construction of smart roads as per the specifications and approved drawings,</li> <li>(x) Dismantling and reconstruction of utilities and storm water drains as per the approved design,</li> <li>(xi) Provision of a traffic management plan for uninterrupted traffic movement during all smart road development activities</li> <li>(xii) Maintenance of roads and keeping them motorable during all the road and drains rehabilitation and construction activities.</li> <li>(xiii) Remedial measures for defects notified for all components including road network, smart street elements and storm water drainage system etc complete.</li> <li>(xiv) Civil works for electrical utilities</li> </ul>
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Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

<p><b>ITB 1.1(d)</b></p>	<p><u>Utility Duct:</u></p> <p>The scope of work for utility duct include</p> <ul style="list-style-type: none"> <li>(i) Development of underground RCC ducting system for accommodating municipal utilities i.e., water, power, OFC and Gas lines,</li> <li>(ii) site survey and soil investigation,</li> <li>(iii) Works to construct utility ducts on all important roads as decided by the SPV</li> </ul>
	<ul style="list-style-type: none"> <li>(iv) preparation of methodology for providing utility connections to houses/commercial establishments/ other entities,</li> <li>(v) Shifting of utilities safely and restoring / relocating the same</li> </ul>
<p><b>ITB 1.1(e)</b></p>	<p><u>Enable integration with Command Control and communication centre</u></p> <ul style="list-style-type: none"> <li>(i) Works related to all basic infrastructure facilities shall enable with compatibility to integrate the same with Command Control and communication centre proposed to be managed by an MSI</li> </ul>
<p><b>ITB 1.2</b></p>	<p>Period during which works and services are to be provided:</p> <ul style="list-style-type: none"> <li>(A) <u>Execution Phase:</u> 15 months (including monsoon period) from the date of Contract Agreement. The work shall be taken up in phases and sections. It includes: <ul style="list-style-type: none"> <li>(i). Carrying out comprehensive investigations, survey, preparation and submission of working drawings</li> <li>(ii). Supply, Execution, installation, testing and commissioning of all civil and electromechanical infrastructures:</li> </ul> </li> <li>(B) <u>Defects liability period:</u> 36 months (including monsoon period) after completion of work.</li> </ul>
<p><b>ITB 2.1</b></p>	<p>The Authority / Implementing agency / Department is: <u>Cochin Smart Mission Limited (CSML)</u></p>
<p><b>ITB 2.1</b></p>	<p>The name of the Project is: <u>Development of Smart Roads in Ernakulam ABD Aea under Smart City Mission, Kochi</u></p>
<p><b>ITB 3</b></p>	<p>This bidding is open to interested Bidders satisfying the eligibility criteria indicated in the Qualification Criteria.</p>

Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<p><b>ITB 7.2</b></p>	<p>RFP Document Fee / Bid fee / Tender fee: <b><u>Rs. 59,000 (Rupees Fifty Nine Thousand Only)</u></b></p> <p>For submission of bid, shall be paid through: <b><u>online e-Tendering Payment Gateway only (https://etenders.kerala.gov.in)</u></b>.</p>
<p><b>B. Bidding Documents</b></p>	
<p><b>ITB 10.1</b></p>	<p>For <b><u>clarification purposes</u></b> only, the Employer's address is</p> <p>Attention: <b>Managing Director, Cochin Smart Mission Limited (CSML),</b></p> <p>Street Address: <b>Revenue Tower, Park Avenue,</b></p> <p>Floor / Room number: <b>10<sup>th</sup> Floor,</b></p> <p>City: <b>Kochi</b></p> <p>ZIP Code: <b>682 011</b></p> <p>Country: <b>India</b></p> <p>Telephone Number: <b>+91-0484-2350355</b></p> <p>Facsimile number: <b>+91-0484-2380980</b></p> <p>Electronic mail address: <b><a href="mailto:csmltenders@gmail.com">csmltenders@gmail.com</a></b></p> <p>Clarification shall be sent thorough <b>e-mail</b> indicated above.</p>
<p><b>ITB 10.2</b></p>	<p>Copies of the Pre-bid minutes (response) and addendum will be published on e-Tendering Portal: <b><u><a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a></u></b>.</p>
<p><b>ITB 10.3</b></p>	<p>A Pre-Bid meeting <b><u>will</u></b> take place at the following date, time and place:</p> <p>Date: <b><u>22<sup>nd</sup> February 2019</u></b></p> <p>Time: <b><u>3:00 p.m.(IST)</u></b></p> <p>Place:</p> <p style="text-align: center;"><b>Office of the Managing Director, Cochin Smart Mission Limited (CSML), 10<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi 682 011 Kerala, India.</b></p>

Contractor

Procuring Entity / Employer

<b>C. Preparation of Bids</b>	
<b>ITB 12.1</b>	The language of the bid is: <b>English</b>
<b>ITB 13.1</b>	The Bidder shall submit with its bid the following additional documents: <b>Nil</b>
<b>ITB 15.1</b>	Alternative Bids <b>will not be</b> permitted.
<b>ITB 15.2</b>	Alternative times for completion <b>will not be</b> permitted.
<b>ITB 15.4</b>	Alternative technical solutions <b>shall not be</b> permitted
<b>ITB 16.3</b>	<p>Add the following note at the end of <b>ITB Clause 16.3</b>:</p> <p><b>“Note (only if applicable):</b> Bidders may like to ascertain availability of excise/custom duty exemption. 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 <b>provided in Section IV Bidding Forms of the bidding documents</b>. Where the bidder has quoted taking into account such benefits, he must give all information required for issue of certificates in terms of the Government of India Central Excise Notification and Customs Notification as per form stipulated. 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 the goods / construction equipment for which certificate is required is Nil.</p> <p>To the extent the employer determines the quantity 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 within 60 days of signing of the contract for material 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 charges will be permitted.</p> <p>If the bidder has considered the customs / 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 certificate.</p> <p>The bids which do not conform to the above provision 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 variation to the said exemptions will be treated as non responsive and rejected. Any delay in procurement of the construction equipment / machinery / goods as a result of the above shall not be entertained as reason for granting any extension of time”.</p>

Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<p><b>ITB 16.4</b></p>	<p>The prices quoted by the Bidder <b><u>shall not be subject to Price Adjustment</u></b></p>
<p><b>ITB 17.1</b></p>	<p>The currency(ies) of the bid and the payment currency(ies) shall be as described below:</p> <p><b>A. Bidders to quote entirely in local currency:</b> The unit rates and the prices shall be quoted by the Bidder in the Bill of Quantities, entirely in <b><u>Indian Rupees</u></b>, the name of the currency of the Employer's country, and further referred to as "the local currency".</p> <p><b>B. Payment currency (ies) shall be in <u>Indian Rupees</u>.</b></p>
<p><b>ITB 18.1</b></p>	<p>The bid validity period shall be <b><u>180 days</u></b>. [from the latest date fixed for the Technical Bid opening in accordance with <b>Clause 22 ITB</b>]</p>
<p><b>ITB 19.1</b></p>	<p>A bid security <b><u>shall be</u></b> required.</p> <p>If a bid security shall be required, the amount and currency of the bid security shall be <b><u>INR 52.10 Lakh, Indian Rupees</u></b>.</p>
<p><b>ITB 19.2</b></p>	<p>Acceptable Bid securities / Earnest Money Deposit (EMD) to be provided are as follows :</p> <ul style="list-style-type: none"> <li>◆ <b><u>In the form of: Bank Guarantee</u></b></li> <li>◆ <b><u>Issued by:</u></b> a scheduled commercial bank in India drawn in favour of <b><u>Managing Director, Cochin Smart Mission Limited, Payable at Kochi</u></b>.</li> <li>◆ <b><u>Validity of Bid security:</u></b> In case of bid security being provided in the form of Bank guarantee, it shall originally be compulsorily valid for <b><u>twenty-eight (28) days beyond the original validity period (which starts from latest date of Technical Bid opening ) of the bid</u></b>, ie. Minimum 180 days + 28 days. Otherwise bids are likely to be rejected.</li> </ul> <p>Format of the Bid security is <b>provided in Section IV Bidding Forms of the bidding documents</b>.</p> <p><b>Refer "APPENDIX-1 (For e-tender)"</b> for important guidelines on e-tender procedure.</p> <p><i>Note: For more details on payment procedures refer help wizard and FAQ for e- payments available on the e- tender website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>.</i></p>
<p><b>ITB 19.3</b></p>	<p>The bid security of a Joint Venture Bidder shall be: <b><u>in the name of the JVA that submits the bid so as to commit fully all partners to the joint venture</u></b>. Any bid not accompanied by an acceptable bid security as indicated for JV shall be rejected by the Employer as non-responsive.</p>
<p><b>ITB 19.5</b></p>	<p>Add the following at the end of this Clause:</p> <p>If bid security is received in the form of BG, then it will be returned in the same form.</p>

Contractor

Procuring Entity / Employer

ITB 20.1

The number of hard copies of bid is: Nil as Not Applicable.

Bids shall be submitted: online only through Online e-Tendering website (<https://etenders.kerala.gov.in>) only- except for the original hard copy of Bid security, Power of attorney, Joint Venture Agreement, Letter of Bid as indicated below:

Bidders are required to submit offer in Two covers, namely

- Cover –I: comprising Tender Fee, Bid security, Power of Attorney, Joint Venture Agreement, Letter of Technical Bid, Qualification fulfilment supporting docuemnts and Technical Bid  
And
- Cover –II: comprising Price Bid / Financial Bid.

Details are as follows:

- (A) **Online Submission [through e-tender website:**  
<http://etenders.kerala.gov.in>]

**Cover –I (Tender Fee, Bid security, Power of Attorney, Joint Venture Agreement, Qualification fulfilment supporting documents and Technical Bid)**

- (i) **Tender Fee** - To be paid online at <http://etenders.kerala.gov.in> only.
- (ii) **Bid Security / EMD** – To be paid in the form of Bank guarantee issued by a scheduled commercial bank in India in the format prescribed in Bid document. The scanned copy of Bid security / (EMD) to be uploaded in the e-tender website ([i.e. www. etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)). Also, Power of Attorney (PoA) and Joint venture agreement (in case of JV) to be scanned and uploaded in the e-tender website
- (iii) **Prequalification including Technical Bid** – Bidders are requested to upload the scanned copies of the following details along with documents indicated in NIT/ RFP/ Bidding document/ latest Corrigendum "online".
- (a) The scanned copy of the NIT/ RFP/ Bidding document/ latest Corrigendum including Prebid Minutes and Addendum (if any) duly signed and stamped in all pages.
- (b) Notorized, Scanned copies of Prequalification / Technical Qualification supporting documents, signed scanned copies of filled details in specified various forms, Letter of Technical Bid, including any / all other requirement specified in RFP / bidding document forming Technical Bid
- (c) All documents signed and scanned including GCC, SCC, Annexures to GCC, SCC as detailed in the Bidding document,

**Cover –II (Price Bid / Financial Bid)**

- (iv) **Duly filled and completed Price Bid / Financial Bid**

- (a) Bidders are requested to quote rates in the Finance Bid (BOQ) ie. Bill of



	<p>Quantities (BOQ) file provided (in .xls format) only.</p> <p>(b) Price bid to be uploaded only in e-tender website: <a href="http://etenders.kerala.gov.in">http://etenders.kerala.gov.in</a></p> <p>(c) Bidder shall not quote/mention rates anywhere else in the tender other than BOQ</p> <p>(d) In the Bid submitted by the bidder, if the prices or price bid are disclosed anywhereelse otherthan in the BOQ, the Bid / tender would be liable for disqualification and would summarily be rejected</p> <p><b>(B) Hard copy [Originals to be submitted at Employer’s address]</b></p> <p><b>In addition, however only following hard copies to be submitted:</b></p> <p><b>Original Bid security / EMD and original power of attorney, Joint venture agreement (in case of JV), Letter of Technical Bid to be submitted (in a sealed envelope mentioning name of work) in the Tender Box at the CSML office, 10<sup>th</sup> Floor, Revenue Towers, Park Avenue, Ernakulum – 682011 before due date and time for submissions of original EMD, Joint Venture Agreement and Power of Attorney (Hard copy) mentioned in NIT/ RFP/ Bidding document/ latest Corrigendum.</b></p> <p><b><u>Preparation of Bid:</u></b></p> <p><i>(i) The Bidder shall prepare the complete bid comprising of documents indicated in <b>Clause 13 &amp; 14 ITB</b>, along with scanned copies of requisite certificates those are mentioned in <b>Section I, Section II &amp; Section IV</b> of the bid document and scanned copy of Bid Security in case it is provided in the form of unconditional bank guarantee</i></p> <p><i>(ii) As specifically indicated the documentary evidences to be uploaded, those are indicated in <b>Section I &amp; III</b> shall be filled &amp; signed. The various forms indicated in <b>Section IV</b> shall be downloaded, filled, signed (if specifically mentioned) scanned &amp; uploaded to the e- procurement website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>. Also, tenderer should take a print out of the declaration letter provided in the e- procurement website, on company letter head and should sign, stamp and upload the same to the e- procurement website</i></p> <p><i>(iii) A bid submitted by a JVA shall comply with the following requirements</i></p> <p><i>a) be signed (wherever specifically indicated) &amp; uploaded to the e- tender / e-GP website, so as to be legally binding on all partners and</i></p> <p><i>b) Include the Representatives’s authorization consisting of a power of attorney signed by those legally authorized to sign on behalf of the JVA &amp; be uploaded to the e-GP website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>.</i></p>
<p><b>ITB 20.2</b></p>	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of: <b><u>written power of attorney authorizing the signatory of the Bid.</u></b></p> <p><b><u>Board resolution copy of the Company on authorization, shall also be furnished.</u></b></p>
<p><b>D. Submission of Bids</b></p>	

Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

ITB 22.1

For **bid submission purposes** only, the Employer's address is :

Online bid submission to be made only through

<http://etenders.kerala.gov.in>

**The deadline for online bid submission is:**

**Date: 06th March 2019, 2018 Time: 5:30 p.m.(IST)**

NOTE: The bid validity period shall be **180 days**. [from the date fixed for the latest Last date of online bid submission.]

**For hard copy submission of-Original Bid security / EMD and original power of attorney**

Attention:	<b>Managing Director, Cochin Smart Mission Limited (CSML),</b>
Street Address:	<b>Revenue Tower, Park Avenue,</b>
Floor/Room number:	<b>10<sup>th</sup> Floor,</b>
City:	<b>Kochi</b>
ZIP Code:	<b>682 011</b>
Country:	<b>India</b>

**The deadline for submission of original EMD and Power of Attorney (Hard copy) is:**

**Date: 08th March 2019, 2018 Time: 2:00 p.m.(IST)**

	<p><b><u>Bid submission procedure:</u></b></p> <p><b><i>Bidders shall submit their bids electronically.</i></b></p> <p><i>Bidders submitting bids electronically shall follow the electronic bid submission procedures specified below:</i></p> <ol style="list-style-type: none"> <li>1. <i>URL of the Website for bid submission through e-tender &amp; Address for submission of Hard copy of Bid security (only if bid security is provided in the form of unconditional bank guarantee), power of attorney and Joint Venture agreement (In case of JV) are as follows:</i> <ol style="list-style-type: none"> <li>(i). <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a></li> <li>(ii). <b>Managing Director</b> <b>Cochin Smart Mission Limited (CSML),</b> <b>10<sup>th</sup> Floor, Revenue Tower, Park Avenue,</b> <b>Kochi 682 011</b> <b>Kerala, India.</b></li> </ol> </li> </ol>
	<ol style="list-style-type: none"> <li>2. <i>The details related to submission of Bids, downloading / uploading of documents or other details are available online in the help wizard, &amp; FAQ of above website.</i> <p><i>The Bids should be uploaded only through e-tender in two cover system.</i></p> <p><b>Bid should contain:</b></p> <p><b>A. Technical bid consisting of following:</b></p> <ol style="list-style-type: none"> <li>(I) <i>Completed Qualification Requirement Statement (as mentioned in <b>Section III</b>) with documentary evidences &amp; other documents / information, those are mentioned in different sections in the bid shall be downloaded. The required particulars are to be filled by the bidder scanned &amp; uploaded to the e tender website. The bidder shall download the forms, fill up the details at the specified location in the same sheet, scan and upload the same file/ document on to the e-tender website.</i></li> </ol> <p><b>Also,</b></p> <ol style="list-style-type: none"> <li>(a) <i>Documents comprising Bid in accordance with <b>Clause 13 ITB</b>, Letter of Bid &amp; Schedules in accordance with <b>Clause 14 ITB</b>, power of attorney and Joint Venture agreement (In case of JV), documents comprising the technical proposal documents establishing the qualification of the Bidder in accordance with <b>Clause 36 ITB</b>,</i></li> <li>(b) <i>documents fulfilling Qualification criteria in accordance with <b>Section III</b></i></li> <li>(c) <i>In accordance with <b>Section IV Bidding forms</b>- shall be downloaded, filled with required details, signed, scanned &amp; uploaded to the e-tender website <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a> on or before the time and date indicated in NIT /<b>Section I ITB</b>.</i></li> </ol> <p><b>(II) Bid security:</b> <i>Bid security in the form of unconditional bank guarantee (if provided in the form of BG), the details like reference number, date, name of the Bank and drawn in favour are to be registered on the e-tender website</i></p> </li> </ol>



[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)

(III) Power of Attorney: It shall be scanned & uploaded to the e-tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)

(IV) In case of Joint Venture, Joint venture agreement shall be signed, scanned & uploaded to the e-tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)

Note: For more details on payment procedures refer FAQ for e- payments available on the e- tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)

**The above documents along with notarized copies of documentary evidences indicated in Section—I ITB, & Section-III Eligibility & Qualification Criteria & Section- IV Bidding forms shall be scanned and uploaded to the website compulsorily, failing which tender will be rejected in view of incomplete bid document**

**B. Price Bid / Financial Bid consisting of following:  
The Price Schedule / Bill Of Quantities with the file in .xls Microsoft Excel format.**

The bidder shall download the Bill Of Quantities file, key in the rates (in figures only) in the same schedule and upload the same file on to the website on or before the stipulated time and date of submission of Bid.

In case, Bid security is provided in the form of unconditional bank guarantee, scanned copy of the same is to be uploaded to the e- tender website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) and the original unconditional bank guarantee should be dropped in the tender box (giving details on the name of work to which Bid is submitted) placed at office of the Managing Director, CSML Kochi, as indicated in the Bid Data Sheet before the last date & time for such submission. In case of failure of the Bidder to submit the same within stipulated time, or failure of confirmation of transfer of Bid security in case of e payment, their Bid will be rejected.'

Upon submission of bids, Unique Identification Number will be automatically generated by the server with time -stamp and sent to the account of the bidder as an acknowledgement after bidder finally uploads the bids

**Also Refer "APPENDIX-E TENDER (For e-tender)" for important guidelines on e-tender procedure / submission.**

#### **ACKNOWLEDGEMENT OF UNDERSTANDING OF TERMS**

By submitting a Bid, each Bidder shall be deemed to acknowledge that he has carefully read all sections of this Bidding document / RFP, including all forms, schedules, annexure, corrigendum and addendums (if any) hereto, and has fully informed itself as to all existing conditions and limitations.

**E. Bid opening and Evaluation**

<p><b>ITB 25.1</b></p>	<p>The Technical bid opening shall take place at:</p> <p>In the event of the specified date of Bid opening being declared a holiday for AUTHORITY,</p> <table border="1"> <tr> <td>Attention:</td> <td><b>Office of Managing Director, Cochin Smart Mission Limited (CSML),</b></td> </tr> <tr> <td>Street Address:</td> <td><b>Revenue Tower, Park Avenue,</b></td> </tr> <tr> <td>Floor/Room number:</td> <td><b>10<sup>th</sup> Floor,</b></td> </tr> <tr> <td>City:</td> <td><b>Kochi</b></td> </tr> <tr> <td>ZIP Code:</td> <td><b>682 011</b></td> </tr> <tr> <td>Country:</td> <td><b>India</b></td> </tr> <tr> <td>Date:</td> <td><b>08th March 2019,</b></td> </tr> <tr> <td>Time:</td> <td><b>3:00 p.m.(IST)</b></td> </tr> </table> <p>the bids shall be opened at the same time and location on the next working day. In addition to that, if their representative of the Bidder remains absent, AUTHORITY will continue with the bid opening process process.</p>	Attention:	<b>Office of Managing Director, Cochin Smart Mission Limited (CSML),</b>	Street Address:	<b>Revenue Tower, Park Avenue,</b>	Floor/Room number:	<b>10<sup>th</sup> Floor,</b>	City:	<b>Kochi</b>	ZIP Code:	<b>682 011</b>	Country:	<b>India</b>	Date:	<b>08th March 2019,</b>	Time:	<b>3:00 p.m.(IST)</b>
Attention:	<b>Office of Managing Director, Cochin Smart Mission Limited (CSML),</b>																
Street Address:	<b>Revenue Tower, Park Avenue,</b>																
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ZIP Code:	<b>682 011</b>																
Country:	<b>India</b>																
Date:	<b>08th March 2019,</b>																
Time:	<b>3:00 p.m.(IST)</b>																
<p><b>ITB 25</b></p>	<p>The hard copy submissions of Bid security, power of attorney and Joint Venture Agreement (in case of JV) shall be initialed by <b>three</b> representatives of the Employer attending Bid opening.</p>																
<p><b>ITB 25.5</b></p>	<p>Add the following at the end of this Clause:</p> <ul style="list-style-type: none"> <li><b>a)</b> Bid of those bidders who have not submitted "Bid Security" and "Fee of Bid Document submission" shall not be opened.</li> <li><b>b)</b> Bids of those Bidders who have not submitted valid "Bid Security" and valid "Cost of Bid Documents" shall be considered as non-responsive and liable to be rejected summarily.</li> <li><b>c)</b> Any Bid not containing the required documents and not fulfilling the qualification criteria indicated in the Bidding Document / Tender document / RFP shall be summarily rejected</li> <li><b>d)</b> During Bid opening, preliminary scrutiny of the Bid documents shall be made to determine whether they are complete, whether required Bid security / EMD has been furnished, whether the Documents have been properly signed, and whether the bids are generally in order. Bids not conforming to such preliminary requirements shall be prima facie rejected. AUTHORITY has the right to reject the bid after due diligence is done.</li> </ul>																

**Section II. Bid Data Sheet**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<p><b>ITB 30.1</b></p>	<p>Add the following at the end of this Clause:</p> <p>The bid is liable to be disqualified in the following cases or in case bidder fails to meet the bidding requirements as indicated in this Bid document:</p> <ul style="list-style-type: none"> <li>a) During validity of the bid, or its extended period, if any, the bidder increases its quoted prices</li> <li>b) The bidder's bid is conditional and has deviations from the terms and conditions of RFP</li> <li>c) Bid is received in incomplete form</li> <li>d) Bid is not accompanied by all the requisite documents</li> <li>e) Information submitted in technical bid is found to be misrepresented, incorrect or false, accidentally, unwittingly or otherwise, at any time during the processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period if any</li> <li>f) Financial bid is enclosed with the same document as technical bid.</li> <li>g) Bidder tries to influence the bid evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process</li> <li>h) In case any one party submits multiple bids or if common interests are found in two or more bidders, the bidders are likely to be disqualified, unless additional bids/bidders are withdrawn upon notice immediately</li> <li>i) If any of the Lead Bidder is also partner in any other bid, then all the affected bids shall be disqualified</li> </ul>
<p><b>ITB 32.1 ( c )</b></p>	<p>The evaluation criteria mentioned in <b>Section III: Qualification Criteria</b>, shall be used for evaluation of the Technical bid of the bidder. The Technical bid not complying with the requirements specified in <b>Section III</b>, shall be considered as non-responsive and shall be rejected.</p> <p>The following criteria shall also be used in evaluation of Technical bids on a pass/fail basis. The Technical bids complying with each of the criteria shall be evaluated as "pass" and the Technical bids which do not comply with any of the criteria shall be evaluated as "fail". The failure in meeting these criteria will not be considered as a cause of rejection of bid;</p> <ul style="list-style-type: none"> <li>(i). Methodology must be clear, provide sound solutions and demonstrate a comprehensive approach for the entire scope of services.</li> <li>(ii). Methodology must provide sufficient level of detail to demonstrate a good understanding of local conditions and possible implementation problems specific to Employer.</li> <li>(iii). Methodology must include detailed information about the logistics for contract implementation (material management; location, size and numbers</li> </ul>

**Contractor**

**Procuring Entity / Employer**

**Section II. Bid Data Sheet**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	<p>of offices and stores)</p> <ul style="list-style-type: none"> <li>(iv). Work plan must be comprehensive and must include a detailed time schedule for each activity under the Services.</li> <li>(v). The concept of transfer of knowledge having innovative aspects and applicable to Employer and training arrangements for Employer’s staff must be clearly provided including number and skills of staff to be trained and means of training.</li> <li>(vi). The proposed materials and equipment must comply with the requirements and standards specified in the Technical Specifications.</li> <li>(vii). The staffing plan must provide, at minimum, numbers, inputs, positions and responsible tasks of all staff.</li> <li>(viii). Key staff must be competent and experienced and must meet the minimum qualification requirements specified in the Technical Specifications.</li> </ul>
<p><b>ITB 34.2</b></p>	<p>Add the following at the end of this Clause:</p> <ul style="list-style-type: none"> <li>(a) Employer / AUTHORITY will constitute a Bid Evaluation Committee (BEC) to evaluate the responses of the bidders</li> <li>(b) The BEC constituted by AUTHORITY shall evaluate the responses to the Bidding document / RFP (Technical Bid, and financial Bid) and all supporting documents / documentary evidence. Inability to submit requisite supporting documents / documentary evidence, may lead to rejection.</li> <li>(c) The decision of the BEC in the evaluation of responses to the Bidding document / RFP shall be final. No correspondence shall be entertained outside the process of negotiation/ discussion with the Committee.</li> <li>(d) The BEC may ask for meetings with the Bidders to seek clarifications on their proposals and may visit Bidder’s client site to validate the credentials/ citations claimed by the bidder.</li> <li>(e) The BEC reserves the right to reject any or all proposals on the basis of any deviations.</li> <li>(f) Each of the responses shall be evaluated as per the criteria and requirements specified in this Bidding document / RFP.</li> <li>(g) Please note that BEC may seek inputs from their professional, external experts in the Bid evaluation process.</li> </ul>
<p><b>F. Award of Contract</b></p>	
<p><b>ITB 39.3/ 39.4</b></p>	<p>website of Authority is: <a href="http://csml.co.in/tenders">http://csml.co.in/tenders</a></p>

## Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	e-tender website is: <a href="http://etenders.kerala.gov.in">http://etenders.kerala.gov.in</a>
<b>ITB 41.1</b>	Standard form and amount of performance security acceptable to the Employer.  (i) Unconditional Bank Guarantee in the amount of [ <b>10</b> ]% of the Accepted Contract Amount
<b>ITB 41.4</b>	Add the following in this Clause:  (i). In the event of the Bidder being unable to carry out works as per the contract for whatever reason Employer / AUTHORITY would invoke the PBG. Notwithstanding and without prejudice to any rights whatsoever of Employer / AUTHORITY under the contract in the matter, the proceeds of the PBG shall be payable to Employer / AUTHORITY as compensation for any loss resulting from the bidder's failure to complete its obligations under the Contract. Employer / AUTHORITY shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 days, indicating the contractual obligation(s) for which the Bidder is in default.  (ii). AUTHORITY shall also be entitled to make recoveries from the bidder's bills, PBG, or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.
<b>ITB 42.1</b>	<b>Disputes Resolution Method:</b>  Disputes Resolution Board consisting of <b>3 members</b> . The method and procedure is mentioned in <b>Conditions of Contract</b> .

**APPENDIX-E TENDER (For e-tender)**

*Important Guidelines to be followed / ensured for e-tender related activities through e- procurement portal of Government of Kerala ie. e-GP website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)*

- (1) Only online bids are invited. Bid documents including the Bill of Quantities (BoQ) can be downloaded free of cost from the e-Government Procurement (e-GP) Website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). All bid documents are to be submitted online only (Except for the documents stipulated in BDS) and in the designated manner on the e-GP website. Tenders/ bids shall be accepted only through online mode on the e-GP website and no manual submission of the same shall be entertained except for the documents specifically indicated.
- (2) A bid submission fee / Tender fee indicated in Invitation for bid / Notice inviting tender (NIT) shall be remitted online during the time of bid submission.
- (3) The hard copies of original Bid security, Power of attorney, Joint Venture agreement, Letter of Technical Bid pertaining to Technical proposal shall be submitted subsequently after online submission of bids in a separate cover before the stipulated date and time of submission in addition to online submission. Price Bid shall only be submitted through online.
- (4) The Tender Inviting Authority/Employer shall not be responsible for any failure, malfunction or breakdown of the electronic system while downloading or uploading the documents by the Bidder during the e-procurement process.
- (5) Details required for e-payment (Details of bank account having core banking facility and e-mail address of the bidder) shall be furnished along with the tender.
- (6) Only those bidders having a valid and active registration, on the date of bid submission, shall submit bids online on the e-GP website.
- (7) Ineligible bidder or bidders who do not possess active registration, on the date of bid submission, are strictly advised to refrain themselves from participating in this tender.
- (8) All Bidders are required to register in the e-procurement portal. The Bidder intending to participate in the bid is required to register in the e-tenders portal using his/her Login ID and attach his/her valid Digital Signature Certificate (DSC) to his/her unique Login ID. He/ She has to submit the relevant information as asked for about the firm/contractor. The bidders, who submit their bids for this tender after digitally signing using their Digital Signature Certificate (DSC), accept that they have clearly understood and agreed the terms and conditions including all the Forms/ Annexure of this tender.
- (9) The tender document(s), may be downloaded free of cost from the e-Government procurement (e-GP website ([www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in))). However a bid submission fee, as mentioned in the NIT, is required to be submitted along with the online bid.
- (10) All prospective bidders are expected to see all information regarding submission of bid for the Work published in the e tender website during the period from the date of publication of NIT for the Work and up to the last date and time for submission of bid. Non observance of information published in the website shall not be entertained as a reason for any claim or dispute regarding a tender at any stage.



- (11) All bids shall be submitted online on the e-GP website only in the relevant envelope(s)/ cover(s), as per the type of tender. No manual submission of bids shall be entertained for the tenders published through e-GP system under any circumstances unless otherwise specified.
- (12) The e-GP system shall not allow submission of bids online after the stipulated date & time. The bidder is advised to submit the bids well before the stipulated date & time to avoid any kind of network issues, traffic congestion, etc. In this regard, the Employer shall not be responsible for any kind of such issues faced by bidder.
- (13) The Bidder is required to login to the e-procurement portal and download the listed documents from the website as mentioned in NIT. He shall save it in his system and undertake the necessary preparatory work off-line and upload the completed bid at his convenience before the closing date and time of submission.
- (14) The bidder is expected to examine carefully all instructions, Bid Data Sheet, Conditions of Contract, Contract Data, Forms, Terms, Technical Specifications/ Works requirements, Bill of Quantities, Annexure and Drawings in the Bid Document. Failure to comply with the requirements of Bid Document shall be at the Bidder's own risk.
- (15) The online bid submitted by the bidder shall comprise the following:
  - (a) Details required for e-payment (Details of bank account having core banking facility and e-mail address of the contractor) in the prescribed format.
  - (b) Online payment of bid submission fee as detailed in the e-tender web site.
  - (c) Bid Security payment details.
  - (d) Copy of Registration Certificate duly attested.
  - (e) Power of attorney
  - (f) Joint Venture Agreement (in case of JV)
  - (g) Technical Bid including qualification fulfillment supporting documents
  - (h) Financial bid comprising Priced Bill of Quantities.
- (16) For e tenders, Bidders shall remit the Bid submission fee (Tender Fee) using the online payment options of e-Procurement system only. Bidders are advised to visit the "Downloads" section of e-Procurement website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in) for State Bank of India or by using NEFT facility. Bidders opting for NEFT facility of online payment are advised to exercise this option at least 48 hours before the last date of bid submission to ensure that payment towards Bid Submission Fee is credited and a confirmation is reflected in the e-Procurement system. The online NEFT remittance form provided by e-Procurement system for making a NEFT transaction is not a payment confirmation. CSML/NIC/SBI/KSITM shall not be responsible for any kind of delay in payment status confirmation.



- (17) For Bid security, as detailed in **BDS**, the Bid security in specified form, amount with required validity shall be scanned and uploaded on e-tender website <http://www.etenders.kerala.gov.in> within the the stipulated date and time for online submission of the Bids.
- (18) The Bidder shall submit their bid online only through the e-GP web site of Kerala ([www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)) as per the procedure laid down for e-submission as detailed in the web site. For e tenders, the bidders shall download the tender documents including the Bill of Quantity (BoQ) file from the e tendering portal <http://www.etenders.kerala.gov.in>. The Bidder shall fill up the documents and submit the same online using their Digital Signature Certificate. On successful submission of bids, a system generated receipt can be downloaded by the bidder for future reference. Copies of all certificates and documents shall be uploaded while submitting the tender online. The following scanned copies of documents are to be submitted online as required by the e-tenders portal.
- (a) Copy of remittance towards bid submission fee and Bid Security.
  - (b) Self attested Copy of the bidder's valid registration certificate in Kerala PWD, CPWD or other approved agencies
  - (c) Duly filled and signed copy of bid submission letter / Letter of Technical Bid as per bid document.
  - (d) Duly filled and signed copy of Technical Bid including qualification fulfillment supporting documents as per bid document.
  - (e) Duly filled and signed copy of Appendix to Bid as per bid document.
  - (f) Duly filled and signed copy of requisition for e-payment form as per bid document.
  - (g) Any other relevant information with testimonials.
  - (h) The bidder shall digitally sign all statements, documents, certificates uploaded by him, owning sole and complete responsibility for their correctness/authenticity as per the provisions of the IT ACT 2000.
  - (i) In addition to the above, the bidder shall upload a complete set of bid document with NIT, Corrigendum, Prebid minutes and Addendum and sections from 1 to IX using his digital signature as a token of acceptance of all bid conditions and the absence of complete set of bid document in the submitted bid shall be treated as non-responsive and will be rejected by the Employer.
  - (j) Price bid: This shall contain only the duly filled BoQ-file in MS-Excel format and shall be uploaded using the digital signature of the bidder in the e-tenders portal.
- (19) After the submission of bid online in the e -tenders portal, the hard copies of the following are to be submitted to the Tender Inviting Authority.
- i. Copy of remittance towards bid submission fee and Original copy of Bid Security and original power of attorney
  - ii. Copy of confirmation of bid submission in the e-tenders portal.

The above documents shall be send to the Employer's office address (as given in the **BDS**) by in such a way that it shall be delivered to the Tender box (as given in the **BDS**) of Tender Inviting Authority before the submission deadline. The Tender Inviting Authority reserves the right to reject any bid, for which the above details are not received before the stipulated date and time.

- (20) The Price bid shall only be submitted through online. The Tender Inviting Authority shall open the price bid of technically qualified bidders in the presence of bidders or their authorised representatives at notified date and time.



## Section II. Bid Data Sheet

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (21) The Tender Inviting Authority shall not be responsible for any failure, malfunction or breakdown of the electronic system while downloading or uploading the documents by the Bidder during the e- procurement process
- (22) In case of any queries on e-tender, Contact below mentioned helpdesk services:

e-tender helpdesk of Kerala IT Mission:	<a href="tel:0484-2332262">Phone number : 0484-2332262</a>
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## Section III. Qualification Criteria

## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Section III. Qualification Criteria

This Section contains the criteria that the “Employer” / “Procuring Entity” shall use to evaluate bids and qualify Bidders. In accordance with **Clause 34 ITB and Clause 36 ITB**, methods or Qualification criteria included in this section shall be used. The Bidder shall provide all the information requested in the forms included in **Section IV, Bidding Forms**.

#### A. Evaluation

In addition to the criteria listed in **Clause 34 ITB** the following criteria shall apply:

##### (i) Assessment of adequacy of Technical Proposal with Requirements

Evaluation of the Bidder’s Technical Proposal will include an assessment of the Bidder’s technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in **Section V (Employer’s Requirements / Works requirements)**.

The evaluation will include an assessment of the Bidder’s capacity to meet the requirements regarding:

- Experience
- Financial situation
- Current contract commitments,
- Cash flow capacity,
- Equipment to be allocated, and
- Personnel to be fielded

(ii) **Alternative Completion Times: Not applicable**

(iii) **Technical alternatives : Not applicable**

#### B. Qualification

Unless specifically indicated otherwise, it is the legal entity or entities comprising the Bidder, and not the Bidder’s parent companies, subsidiaries or affiliates, that must satisfy the qualification criteria described below.

##### 1.1 Eligibility

<i>Factor</i>	1.1 ELIGIBILITY			
<i>Sub-Factor</i>	<b>Criteria</b>	<b>Compliance Requirements</b>		<b>Documentation</b>
	<b>Requirement</b>	<b>Bidder</b>		<b>Submission Requirements</b>
		<b>Single Entity</b>	<b>Joint Venture</b>	

Contractor

Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

			All partners combined	Each partner	At least one partner	
1.1.1 Nationality	Nationality in accordance with <b>Clause 3.1 (a) ITB.</b>	Must meet requirement	JVA must meet requirement	Must meet requirement	N / A	<b>Form ELI – 1 and ELI – 2</b> with attachments
1.1.2 Conflict of Interest	No- conflicts of interests as described in <b>Clause 3.2 ITB.</b>	Must meet requirement	JVA must meet requirement	Must meet requirement	N / A	<b>Letter of Technical Bid</b>
1.1.3 ineligibility for corrupt or fraudulent practices	A bidder shall not be under a declaration of ineligibility for corrupt or fraudulent practices issued by the Employer as described in <b>Clause 3.1 (f) ITB.</b>	Must meet requirement	JVA must meet requirement	Must meet requirement	N / A	<b>Letter of Technical Bid</b>
1.1.4 ineligibility due to expelling / blacklisting / rescinding of work	Bidder Should not have failed in the last three (3) years to perform on any contract or should have not been expelled from or abandoned any PWD, Government of Kerala work, any other State Government, Central Government or have any of their works rescinded for any reason as described in <b>Clause 3.3 ITB.</b>	Must meet requirement	JVA must meet requirement	Must meet requirement	N / A	<b>Letter of Bid</b>  (A declaration to this effect shall be furnished).

Contractor

Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<i>Factor</i>	1.1 ELIGIBILITY					
Sub-Factor	Criteria	Compliance Requirements				Documentation
	Requirement	Single Entity	Bidder			Submission Requirements
			Joint Venture			
			All partners combined	Each partner	At least one partner	
1.1.5 <b>Government Owned Entity</b>	Compliance with conditions as described in <b>Clause 3.4 ITB.</b>	Must meet requirement	Must meet requirement	Must meet requirement	N / A	<b>Form ELI – 1. and ELI –2,</b> with attachments

**1.2 Pending Litigation: Pending Litigation Criterion and performance in past contracts shall apply:**

<i>Factor</i>	1.2 HISTORICAL CONTRACT NON-PERFORMANCE					
Sub-Factor	Criteria	Compliance Requirements				Documentation
	Requirement	Single Entity	Bidder			Submission Requirements
			Joint Venture			
			All partners combined	Each partner	At least one partner	

Contractor

Procuring Entity / Employer

**Section III. Qualification Criteria**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Factor</b>	<b>1.2 HISTORICAL CONTRACT NON-PERFORMANCE</b>					
<b>Sub-Factor</b>	<b>Criteria</b>	<b>Compliance Requirements</b>				<b>Docu- mentation</b>
	<b>Requirement</b>	<b>Single Entity</b>	<b>Bidder</b>			<b>Submissi on Require ments</b>
			<b>Joint Venture</b>		<b>At least one partner</b>	
			<b>All partners combined</b>	<b>Each partner</b>		
<b>1.2.1 History of non-performing contracts</b>	Non-performance of a contract did not occur within the last <b>5 (five)</b> years [1 April 2013 to bid submission date] prior to the deadline for submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the bidder have been exhausted.	Must meet requirement by itself or as partner to past or existing JVA	N / A	Must meet requirement by itself or as partner to past or existing JVA	N / A	<b>Form-LIT</b>

Contractor

Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<i>Factor</i>	1.2 HISTORICAL CONTRACT NON-PERFORMANCE					
Sub-Factor	Criteria	Compliance Requirements				Docu- mentation
	Requirement	Single Entity	Bidder			Submissi- on Require- ments
			Joint Venture		At least one partner	
			All partners combined	Each partner		
1.2.2 <b>Pending Litigation</b>	All pending litigation shall in total not represent more than <b>Eighty</b> percent ( <b>80%</b> ) of the Bidder's net worth (calculate as the difference between total assets and total liabilities) and shall be treated as resolved against the Bidder.	Must meet requirement by itself or as partner to past or existing JVA	N / A	Must meet requirement by itself or as partner to past or existing JVA	N / A	<b>Form-LIT</b>
1.2.3 <b>Levy of Maximum LD</b>	Final Liquidated damages (LD) due to poor performance, in contracts executed in last <b>10 years [1 April 2008 to bid submission date]</b> should not have been imposed to the maximum value of eligible LD in more than <b>10%</b> of contracts completed.	Must meet requirement	N / A	Must meet requirement	N / A	<b>Form Tech-1</b>  Bidder / each partner of JV will submit an undertaking in support of this requirement (separate by each JV partner).

Contractor

Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>Factor</b>	<b>1.2 HISTORICAL CONTRACT NON-PERFORMANCE</b>					
<b>Sub-Factor</b>	<b>Criteria</b>	<b>Compliance Requirements</b>				<b>Documentation</b>
	<b>Requirement</b>	<b>Single Entity</b>	<b>Bidder</b>			<b>Submission Requirements</b>
			<b>Joint Venture</b>		<b>At least one partner</b>	
			<b>All partners combined</b>	<b>Each partner</b>		
<b>1.2.4 Rescinding / Termination of contracts due to poor performance</b>	Rescinding/ Termination of contracts due to poor performance shall not be more than <b>5%</b> of contracts in hand during last <b>10 years</b> [1 April 2008 to bid submission date]	Must meet requirement	N / A	Must meet requirement	N / A	<b>Form Tech-2</b>  Bidder /each partner of JV will submit an undertaking in support of this requirement (separate by each JV partner).



## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 1.3 Financial Requirements

Factor	1.3 FINANCIAL SITUATION							
	Criteria	Compliance Requirements				Documentation		
		Requirement	Single Entity	Bidder			Submission Requirements	
				All partners combined	Each partner			At least one partner
1.3.1 <b>Historical Financial Performance</b>	<p>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 <b>five [5] years [1 April 2013 to 31 March 2018]</b> to demonstrate the current soundness of the bidders financial position and its prospective long term profitability.</p> <p>Return on investment (ratio of annual profit before taxes and the net worth) should be positive for at least <b>three years in last five years.</b></p>	Must meet requirement	N / A	Must meet requirement	N / A	<p><b>Form FIN-1</b> with attachments</p> <p>Certificate from the Statutory Auditor (Chartered Accountant) / Company Secretary</p> <p>The said certificate also need to be counter signed by authorized signatory of the bidder</p>		
	<p>A Bidder's net worth calculated as the difference between total assets and total liabilities should be positive for <b>at least three years in last five years.</b></p>							

Contractor

Procuring Entity / Employer

## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Factor	1.3 FINANCIAL SITUATION					
	Criteria	Compliance Requirements				Documentation
Sub-Factor	Requirement	Single Entity	Bidder			Submission Requirements
			Joint Venture			
			All partners combined	Each partner	At least one partner	
1.3.2 .Average Annual Turnover	Minimum average annual turnover (Civil Engineering construction) of <b>INR 15.63 CRORE</b> , calculated as total certified payments received for contracts in progress or completed, within the last <b>Three [3] years [1 April 2015 to 31 March 2018]</b> .  <b>Ie. (FY 2015-2016, 2016-2017, 2017-2018)</b>	Must meet requirement	Must meet requirement	Must meet <b>thirty percent (30%)</b> of the requirement	Must meet <b>fifty percent (50%)</b> of the requirement	<b>Form FIN-2 Certificate from the Statutory Auditor (Chartered Accountant) / Company Secretary</b>  <b>The said certificate also need to be counter signed by authorized signatory of the bidder</b>

Contractor

Procuring Entity / Employer

## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Factor	1.3 FINANCIAL SITUATION						
	Sub-Factor	Criteria	Compliance Requirements			Documentation	
			Requirement	Single Entity	Bidder		
					All partners combined		Each partner
Submission Requirements							
1.3.3 Financial Resources	<p>The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, lines of credit, or other financial resources (means, other than any contractual advance payments) to meet:</p> <p>(i) the following cash-flow requirement:</p> <p><b>INR 13.03 CRORE</b> and</p> <p>(ii) the overall cash flow requirements for this contract and its current commitments.</p> <p><b>[Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within one year].</b></p>	Must meet requirement	Must meet requirement	Must meet <b>thirty percent (30%)</b> of the requirement	Must meet <b>fifty percent (50%)</b> of the requirement	<p><b>Form FIN-3</b> and <b>Form FIN-4</b></p> <p>Certificate from the Statutory Auditor (Chartered Accountant) / Company Secretary</p> <p>The said certificate also need to be counter signed by authorized signatory of the bidder</p>	

Contractor

Procuring Entity / Employer

## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Factor	1.3 FINANCIAL SITUATION							
	Sub-Factor	Criteria	Compliance Requirements			Documentation		
			Requirement	Single Entity	Bidder		Submission Requirements	
					All partners combined			Each partner
1.3.4 Bidding Capacity	<p>Availability of Bidding Capacity should be at least equal to <b>INR 52.10 CRORE</b></p> <p>Available bid capacity will be evaluated as under:</p> <p style="text-align: center;"><b>Bidding capacity = 2xAxN-B</b></p> <p>Where</p> <p>A= maximum annual construction turnover in last <b>five</b> financial years taking into account the completed as well as works in progress</p> <p>(Updated to the current price level, rate of inflation shall be <b>7% per year</b>).</p>	Must meet requirement	Must meet requirement	Must meet <b>thirty percent (30%)</b> of the requirement	Must meet <b>fifty percent (50%)</b> of the requirement	<p><b>Form FIN -6</b></p> <p>Certificate from the Statutory Auditor (Chartered Accountant) / Company Secretary</p> <p>The said certificate also need to be counter signed by authorized signatory of the bidder</p>		

Contractor

Procuring Entity / Employer

**Section III. Qualification Criteria**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<i>Factor</i>	1.3 FINANCIAL SITUATION					
	Criteria	Compliance Requirements				Documentation
Sub-Factor	Requirement	Bidder				Submission Requirements
		Single Entity	Joint Venture			
			All partners combined	Each partner	At least one partner	
	<p>N= Number of years prescribed for completion of works (infrastructure component) for which bids has been invited which is <b>1.25 years</b> for this bid.</p> <p>B= Value at current price level of existing commitments and ongoing works to be completed during the next <b>3 years</b>. Bidders will give a calculation for the same.</p>					

Contractor

Procuring Entity / Employer

**Section III. Qualification Criteria**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Factor	1.3 FINANCIAL SITUATION						
	Sub-Factor	Criteria	Compliance Requirements			Documentation	
			Requirement	Single Entity	Bidder		
					All partners combined		Each partner
1.3.5 <b>Financial stability</b>	<p>The bidder(s) shall not have applied for Corporate Debt Restructuring (CDR) or facing follow up action of CDR or facing recovery proceedings from Financial Institutions or facing winding up proceedings or those under BIFR in the last <b>5 financial years [1 April 2013 to 31 March 2018].</b></p> <p><b>Ie. (FY 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018)</b> and up to the date of bid submission.</p>	Must meet requirement	N / A	Must meet requirement	N / A	<p><b>Form Tech-3</b></p> <p>Certificate from the Statutory Auditor (Chartered Accountant) / Company Secretary</p> <p>The said certificate also need to be counter signed by authorized signatory of the bidder</p>	

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Procuring Entity / Employer

## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 1.4 Construction Experience

Factor	1.4 EXPERIENCE					
Sub-Factor	Criteria	Compliance Requirements				Documen- tation
	Requirement	Single Entity	Bidder			Submissi- on Requirem- ents
			All partners combined	Each partner	At least one partner	
1.4.1 <b>General Experience</b>	Experience under construction, Infrastructure contracts in the role of contractor, subcontractor, or management contractor for at least the last <b>five [5]</b> years  <i>Ie. (2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018)</i> prior to the bid submission deadline, and with activity in at least <b>nine (9) months in each year.</b>	Must meet requirement	N / A	Must meet requirement	N / A	<b>Form EXP-1</b>
1.4.2 <b>(a) Specific Experience (CIVIL)</b>	<b>(a)</b> Participation as contractor, management contractor, or subcontractor, in <b>at least (i) One similar Civil infrastructure project work</b> of contract value of at least <b><u>INR 20.84 CRORE</u></b> <b>within the last seven (7) years</b> , that have been successfully or are *substantially (as detailed in <b>Section IV</b> ) completed. <i>Ie. (from 01<sup>st</sup> Feb'2012 to 31<sup>st</sup> January 2019)</i> prior to the bid submission deadline,	Must meet requirement	Must meet requirements	N / A	Must meet requirements	<b>Form EXP 2(a)</b>

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## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Factor	1.4 EXPERIENCE					Documentation
	Criteria	Compliance Requirements			Submission Requirements	
Sub-Factor	Requirement	Bidder				
		Single Entity	Joint Venture			
			All partners combined	Each partner	At least one partner	
	<p><b>NOTE: Similar Civil infrastructure project</b> implies, Road works for National highway / State Highway /Other Roads/ Airports, Bridges, construction of Underground Utility ducting and Stormwater drainage works etc</p>					

### Note:

1. **\*substantially completed means:**
  - (i) Contractor has completed the works but could not commission the same because of hindrances beyond the control of contractor OR
  - (ii) Contractor has completed 90 % of the Contracted work (both physical and financial) OR
  - (iii) Contractor has completed the work and commissioned the works atleast for the amount required for qualification, out of large size contract
2. **Experience of the bidder earned by him as the JV partner will be considered to the limit of its share in the completed works shown in that JV or consortium agreement.**
3. **2. For present price level of cost of completed and commissioned works, the previous year (s) value shall be given weightage of 7% per year as follows:**

Sl. No	Financial Year in which work was completed*	Weightage
(i)	2017-18	1.00
(ii)	2016-17	1.07
(iii)	2015-16	1.145
(iv)	2014-15	1.225
(v)	2013-14	1.31

\*For eg. Financial Year 2016-17 means 1 April 2016 to 31 March 2017

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## Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 1.5 Specific Requirements

- 1.5.1 Clients certificate of experience must clearly indicate whether (i) Completed and commissioned or (ii) Substantially completed
- 1.5.2 The Bidder shall submit copies of Work Orders, Completion Certificates in support of their experience claims. Only works of Govt. / PSU / Autonomous bodies under Govt. Sector shall be considered. The experience certificates issued by only the respective project authority/owner shall be considered for evaluation of experience. Certificates issued for sub-contracting the work by the original contractor or any associated agency will not be considered.
- 1.5.3 For considering experience of the bidder, out of its experience as JV, its share of works within the JV shall be considered with relevant documentation/ certificates.
- 1.5.4 JV and / or Consortium shall comprise of not more than **three firms/companies (including the lead partner)**. The minimum equity of the lead firm of the **JV must be 51%** and that of the other firms must be 15%, at the minimum.

### 1.6 Shedule-Personnel

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

#### (A) Minimum Personnel: (Civil work)

SI No.	Position	Qualification	Number	Total Work Similar Experience in Years	In Similar Works Experience in Years
1	Project Manager	BE Civil Engineering or Equivalent	1	12	5
2	Construction Manager	BE Civil Engineering or Equivalent	1	10	5
3	Planning Engineer	BE Civil Engineering or Equivalent	1	10	5
4	Quality Control and Material Engineer	BE Civil Engineering or Equivalent	1	10	5
5	Plant Engineer	BE Mechanical Engineering	1	10	5
6	Survey Engineer	Diploma in Civil	1	10	3
7	Quantity Surveyor	BE Civil Engineering	1	8	3

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Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

8	Site Engineer	BE Civil or Diploma	4	6 (8 for Diploma Holders)	3
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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. **The bidder shall have to submit an affidavit on non judicial stamp paper of Rs 200 duly Notarised by the Notary Public to the effect that he shall be deploying competent staff as per requirement during the execution of work**

#### 1.7 Shedule-Equipment

The Bidder must demonstrate that it has the key equipment (either owned rented or leased):

#### **(A) Minimum Equipment (Civil works)**

*(See clause 14 of Section 2-ITB)*

Sl. No.	List of Equipment	Numbers	Capacity
	<b>During Execution</b>		
1	HOT MIX PLANT- BATCH TYPE ELECTRONIC CONTROLS AND VIBRATORY SCREENS	1	60 TPH
2	WMM PLANT	1	100 TPH
3	EXCAVATORS AND DOZERS	3	1.25 CUM
4	MOTOR GRADER	2	200 CUM/HR.
5	PAVER FINISHER WITH ELECTRONIC SENSORS	1	1 NOS. CAPABLE OF PAVING 5.5MTR./HR.
6	CONCRETE BATCHING PLANT	1	15 CUM/HR.
7	PNEUMATIC TYRE ROLLERS	1	8 TONNE MINIMUM 8 TYRES
8	VIBRATORY ROLLER	2	8 TO 10 TONNE

Contractor

Procuring Entity / Employer

### Section III. Qualification Criteria

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

9	TANDOM VIBRATORY ROLLER	2	8 TO 10 TONNE
10	TRUCKS	10	10 TONNE
11	HYDRA CRANE	1	
12	MINI VIBRATORY ROLLER	1	
13	TRUCK MOUNTED TRANSIT MIXER	4	4-6 CUM
14	BITUMEN PRESSURE DISTRIBUTOR	2	1750 SQM/HR.
15	WATER TANKER	2	6 KL
16	PAVER BLOCK CASTING MACHINE	1	
17	MECHANICAL BROOM	1	1500 SQMTR/HR.

The Bidder shall provide further details of proposed items of equipment & Tools using **Form EQU: Equipment** in **Section IV, Bidding Forms**.

**The bidder shall have to submit an affidavit on non judicial stamp paper of Rs 200 duly Notarised by the Notary Public to the effect that he shall be deploying required equipments as per requirement during the execution of work.**

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

## Section IV. Bidding Forms

### Table of Forms

<b>Letter of Technical Bid</b> .....	78
<b>Appendix to Bid- Schedule of Adjustment Data</b> .....	80
<b>Bill of Quantities</b> .....	83
<b>Bill of Quantities (BOQ.xls file)</b> .....	83
<b>Financial Bid Format &amp; Instructions</b> .....	85
<b>Preamble to Bill of Quantities</b> .....	87
<b>Technical Proposal / Bid</b> .....	94
Site Organization.....	95
Method Statement.....	96
(Bidder shall insert the Method Statement complying to the following).....	96
Mobilization Schedule.....	97
Work Plan and Construction Schedule.....	98
(Bidder shall insert the Work plan and Construction Schedule).....	98
<b>Equipment</b> .....	99
Form-EQU: Equipment.....	99
Format for Undertaking on deployment of competent equipment.....	101
<b>Personnel</b> .....	102
Form PER-1: Proposed Personnel.....	102
Format for Undertaking on deployment of competent staff on company letter head.....	103
Form PER-2: Resume of Proposed Personnel.....	104
<b>Bidders Qualification</b> .....	105
Form ELI – 1: Bidder’s Information Sheet.....	105
Form ELI – 2: JV Information Sheet.....	106
Form LIT – Pending Litigation.....	108
Form FIN – 1: Historical Financial Performance / Financial Situation.....	109
Form FIN – 2: Average Annual Construction Turnover.....	111
Form FIN – 3: Availability of Financial Resources.....	112
Form FIN – 4: Current Contract Commitments / Works in Progress.....	113
Form FIN – 5: Sample Form for assured revolving line of credit facility.....	114
Form EXP – 1: General Construction Experience.....	116
Form EXP – 2(a): Specific Construction Experience.....	117
Form TECH 1: Draft Format for Undertaking on Liquidated Damages.....	118
Form TECH 2: Draft format for Undertaking on Rescind / Terminated contracts.....	119
Form TECH 3: Draft format for Undertaking on Corporate Debt Restructuring.....	120
<b>Form of Bid Security</b> .....	121
<b>Declaration Regarding Deemed Export Benefits</b> .....	123
<b>Form PRE-BID: Format of sending pre-bid queries</b> .....	125

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

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<b>Format for Declaration by the bidder for not being Blacklisted / Debarred.....</b>	<b>126</b>
<b>Format for Power of Attorney .....</b>	<b>127</b>
<b>Format for Power of attorney in case of Consortium.....</b>	<b>129</b>
<b>Format of Consortium Agreement.....</b>	<b>131</b>
<b>DECLARATION FORM.....</b>	<b>133</b>

**Letter of Technical Bid**

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

[The Bidder shall fill in this Form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: ...../....., 2018

No.: \_\_\_\_\_

Invitation for Bid No.: \_\_\_\_\_

To: **Managing Director,  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi 682011**

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with **Instructions to Bidders (ITB) 11** [insert the number and issuing date of each Addenda] \_\_\_\_\_;
- (b) We offer to execute in conformity with the Bidding Document the following Works  
**Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi;**
- (c) Our bid consisting of the Technical Bid and the Price Bid shall be valid for a period of [specify the number of calendar days] \_\_\_\_\_ days from the latest date fixed for the Technical bid opening date) in accordance with the **Sub-Clause 18.1 ITB** of Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) We, including any subcontractors or suppliers for any part of the contract, have or will have nationalities from eligible countries, in accordance with **Sub-Clause 3.1 ITB;**
- (e) We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest in accordance with **Sub-Clause 3.2 ITB;**
- (f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;
- (g) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process in accordance with **Sub-Clause 3.2 (e) ITB;** other than alternative offers submitted in accordance with **Clause 15 ITB;**
- (h) We agree to permit **Cochin Smart Mission Limited [CSML]** or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by **Cochin Smart Mission Limited [CSML].**

**Contractor**

**Procuring Entity / Employer**

**Section IV. Bidding Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

- (i) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in **Section V (Employer’s Requirements / Works requirements / Technical Specifications)** and our Technical Bid, or as otherwise agreed with the Employer.
- (j) We, including any of our subcontractors or suppliers for any part of the contract, have not been declared ineligible by any State Government agency or Central Government agency under the Employer’s country laws or official regulations or by an act of compliance
- (k) We, including any of our subcontractors or suppliers for any part of the contract, have not failed in the last three **(3) years** to perform on any contract or been expelled from or abandoned any PWD, Government of Kerala work, any other State Government, Central Government or have any of their works rescinded for any reason in accordance with **Sub-Clause 3.3 ITB;**
- (l) We are not a government owned entity/ We are a government owned entity but meet the requirements of **Sub-Clause 3.4 ITB<sup>5</sup>;**
- (m) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: **[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]**

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

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

- (n) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (o) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (p) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Name \_\_\_\_\_ In the capacity of \_\_\_\_\_  
**[Insert complete name of person signing the Bid]      [Insert legal capacity of person signing the bid]**

Signed \_\_\_\_\_  
**[Insert signature of person whose name and capacity are shown above]**

Duly authorized to sign the bid for and on behalf of \_\_\_\_\_  
**[Insert complete name of Bidder]**

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_  
**[Insert date of signing]**

<sup>5</sup> Use one of the two options as appropriate



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Appendix to Bid- Schedule of Adjustment Data

*Bidder shall follow the applicable procedure indicated below:*

<i>Submission of tender through</i>	<i>Procedure to be followed by Bidder</i>
<i>e-tendering (through e- procurement portal <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>)</i>	<i>Table A. Local Currency-<b>"Appendix to Bid- Schedule of Adjustment Data"</b> provided in subsequent sheets shall be downloaded, particulars are to be filled, scanned &amp; uploaded by the Bidder, to the e- tender website <b>"www.etenders.kerala.gov.in"</b> along with the Bid.</i>

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Appendix to Bid- Schedule of Adjustment Data

Persuant to ITB Clause 16.4, in Table A below, the Bidder shall derive and fill its proposed weightings for local currency payment. **(Not Applicable to this contract)**

Table A. Local Currency

Index code	Index description	Source of index	Bidder's related currency amount	Bidder's proposed weighting %
1	Cost Index for Labour	The average consumer price index for industrial workers (whole-sale prices)  As published in Reserve Bank of India Journal, for the Kochi area / as published by the Labour bureau, Government of India for the quarter under consideration on website <a href="http://www.labourbureau.gov.in">www.labourbureau.gov.in</a> for Ernakulam Centre, Kerala state	100%	
2	Cost index for material (Steel)	The average wholesale price index of " <b>Mild Steel- Long Products</b> " As published by the Office of the Economic Adviser Government of India, Ministry of Commerce & Industry website <a href="http://www.eaindustry.nic.in">www.eaindustry.nic.in</a>	100%	
3	Cost index for material (Cement)	The average wholesale price index of " <b>Ordinary Portland Cement</b> " As published by the Office of the Economic Adviser Government of India, Ministry of Commerce & Industry website <a href="http://www.eaindustry.nic.in">www.eaindustry.nic.in</a>	100%	
4	Cost Index for equipment operation (Fuels and lubricant)	The average wholesale price index of " <b>High Speed Diesel (HSD)</b> " As published by the Office of the Economic Adviser Government of India, Ministry of Commerce & Industry website <a href="http://www.eaindustry.nic.in">www.eaindustry.nic.in</a>	100%	
5	Cost index for material (Bitumen)	The official retail price of bitumen at the <b>IOC</b> depot in Kochi	100%	

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Index code	Index description	Source of index	Bidder's related currency amount	Bidder's proposed weighting %
6	Cost index for material (Plant & Machinery)	The average wholesale price index of <b>"Manufacture of Machinery and Equipment"</b>  As published in Reserve Bank of India Journal/ as published by the Office of the Economic Adviser Government of India, Ministry of Commerce & Industry website <a href="http://www.eaindustry.nic.in">www.eaindustry.nic.in</a>	100%	
7	Cost Index for local materials (other than cement, steel, bitumen and POL)	The average wholesale price index of <b>"all commodities"</b>  As published in Reserve Bank of India Journal/ as published by the Office of the Economic Adviser Government of India, Ministry of Commerce & Industry website <a href="http://www.eaindustry.nic.in">www.eaindustry.nic.in</a>	100%	
				<b>100.00</b>

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**Bill of Quantities**

**Bill of Quantities (BOQ.xls file)**

*(uploaded separately as .xls file in VOLUME-3)*

*[via e- procurement portal [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)]*



### Financial Bid Format & Instructions

**To be submitted on e-Tendering Portal only (i.e. [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in))**

**Bill of Quantities ( BOQ )is uploaded separately as Microsoft excel file.**

**Instructions:**

- a) Bill of Quantities (BOQ) can be downloaded free of cost from the e- Government Procurement (e-GP) Website [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in). All bid documents are to be submitted online only and in the designated manner on the e-GP website. Tenders/ bids shall be accepted only through online mode on the e-GP website and no manual submission of the same shall be entertained except for the documents specifically indicated.
- b) The Bidder shall submit their bid online only through the e-GP web site of Kerala ([www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)) as per the procedure laid down for e-submission as detailed in the web site. For e tenders, the bidders shall download the tender documents including the Bill of Quantities (BOQ) file from the e tendering portal <http://www.etenders.kerala.gov.in>. The Bidder shall fill up the documents. and submit the same online using their Digital Signature Certificate. On successful submission of bids, a system receipt can be generated and downloaded by the bidder for future reference. Copies of all certificates and documents shall be uploaded while submitting the tender online. Submission of Price proposal in hard copy would result in disqualification and rejection of bid
- c) CSML does not guarantee the quantity for the particular line items given above. The actual quantity for the given items may be more or less. The payment shall be made based on unit cost quoted for the particular item on actual work/item is undertaken / supplied.
- d) All items provided should be under Insurance. The Insurance should be for entire duration of the Project for 5 Years and comprehensive covering damages for Theft, Fire, Natural Calamities, Riots and Terrorists activities etc.
- e) Bidder should provide all prices as per the prescribed format under BOQ.
- f) All the prices are to be entered in Indian Rupees ONLY

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

- g) CSML reserves the right to ask the Bidder to submit proof of payment against any of the taxes, duties, levies indicated.
- h) CSML shall take into account all Taxes, Duties & Levies for the purpose of evaluation
- i) The Bidder needs to account for all Out of Pocket expenses, no additional payment shall be made by CSML whatsoever.
- j) Bidder should refer the Bid document / RFP document for details on the technical requirements and specifications for the items mentioned in the financial formats.
- k) Any component/fixtures/ancillary/adjunct to the specified item shall be deemed to have been included in the unit rates quoted above.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Preamble to Bill of Quantities

- 1) The Bill of Quantities (BOQ) shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Specifications, and Drawings.
- 2) The quantities given in the BOQ 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 Contractor and verified by the Employer's Representative, and valued at the rates and prices bid in the priced BOQ, where applicable, and otherwise at such rates and prices as the Employer's Representative may fix within the terms of the Contract.
- 3) The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction equipment, labor, supervision, materials, surveying, setting out, erection, maintenance, all lead and lift, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.
- 4) General directions and descriptions of work and Materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering prices against each item in the priced Bill of Quantities.
- 5) The method of execution and measurement of completed work for payment shall be in accordance to the respective procedures provided in the Technical Specifications or Particular Specifications under this Contract and in the absence of which shall be in accordance to the relevant BIS Standard and Standard Specification of the State of Kerala or Standard Specification published by the Central Public Works Department, Government of India as the case may be.
- 6) Rock is defined as all material that, in the opinion of the Employer's Representative, require blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for their removal, and that cannot be extracted by ripping with a tractor of at least 150 brake horsepower (BHP) with a single, rear-mounted, heavy-duty ripper.
- 7) All defective works are liable to be demolished, rebuilt and defective materials replaced by the contractor at his own cost and time
- 8) In view of the site location and their prevailing condition, it is mandatory to the Contractor to visit the site and make himself thoroughly familiar with the site conditions, access and account for all possible difficulties and other requirements mentioned elsewhere in his bid prior to submission. When a contractor submits his bid for this work, it will be considered that he has quoted for this work with full and complete knowledge of the site and prevailing conditions, and no claim for additional compensation shall be entertained on this account.
- 9) Description of items in this BOQ is by itself not complete, and for a full description the BOQ should be read together with the Technical Specifications and Drawings. Rates quoted in the BOQ are deemed to have included all aspects covered in the Preamble and Technical Specifications, and all features and details shown in the Drawings.
- 10) The Bidder shall, in the course of studying the bid document, point out all his/her remarks on the documents and make all his/her queries to the Employer who will study these remarks and clarify any discrepancy between the Bidding Documents.

**Contractor**

**Procuring Entity / Employer**



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- 11) Submissions shall be strictly in accordance with the documents and shall not be qualified in any way. The Bidder shall not alter the text of the BOQ.
- 12) Extra and excess items of work shall not vitiate the Contract. The Contractor shall be bound to execute extra items of work as directed by the Engineer. The rates for extra items will be as per rates decided under Contract Conditions.
- 13) For the evaluation process, if requested by the Evaluation Committee, the Contractor shall provide a sheet analysis for all priced items showing how the rate entered was derived.
- 14) The Bidder shall satisfy himself/herself as to the meaning of every item in the BOQ. The rates and prices inserted in the BOQ by the bidder shall be deemed to cover all costs, taxes, customs and import duties, levies, profits, risks, liabilities, insurance and obligations set forth or implied in the bid including, but not limited to the following:
  - (i) All labour and Materials including consumables;
  - (ii) All temporary work of every description required including over ground pumping and other requirements to avoid disruption to the service whilst maintenance or repair work is carried out;
  - (iii) The provision and use of all equipment, tools and Plant of every kind, whether mechanical or non-mechanical, required for the expeditious carrying out of the Works in their proper sequence;
  - (iv) Provision for scaffolding, staging, guard rails, temporary stairs, temporary access during execution, approach roads up to the Site for the movement of vehicles, and heavy excavation machinery with supporting transport facility;
  - (v) Provision for excavation, back-filling, bringing to the Site extra fill for back-fill, making good and reinstating surfaces, disposing of surplus material, dealing with all ground water and wastewater flows, and for work in close proximity to other utility apparatus including protecting that apparatus;
  - (vi) Provision for work on corridors such as traffic control measures, safety barriers, obtaining any approvals and permits from authorities, and reinstatement of surfaces;
  - (vii) Cooperation and coordination of the work with related authorities, other contractors and utilities, including obtaining their permission before starting the related Works if required; and
  - (viii) Providing security arrangements to guard the Site and premises at all times and to maintain strict control on the movement of Materials and labor until the completion of the work.
- 15) All electricity costs and initial connection charges etc. associated with operations shall be paid by **CSML** directly to the electricity service provider. The power connections shall be obtained in the name of /[**CSML or KMC as informed later** ], the charges of which will be paid by **CSML**] directly to electricity department or reimbursed under provisional sum if paid by the Contractor.

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- 16) The serviceable materials, recovered while shifting of utilities as ascertained by the Employer or Engineer in charge, shall be deposited at designated store yards or as directed by the Employer or Engineer in charge. No payment shall be made to the Contractor in this regard.
- 17) Works itemized in the BOQ will be subject to measurement. Such measurement will be in the unit of measurement shown the BOQ and payment shall be made on the measured quantities.
- 18) All rules and regulations of the labor department, contract labor Laws, provident fund and employee state insurance and connected Laws, and all other Laws of the land are to be complied with by the Bidder within the quoted rates.
- 19) Contractor shall make arrangements for required space for construction of, office and stores at suitable locations. No land will be provided by the Employer to the Contractor for constructing any structure for his labor, workman and supervisory camps, un-authorized hutments, at the Site or within the premises. The Contractor shall make his/her own arrangements for the same outside the premises/boundary. These, if any, shall be with the knowledge of and prior approval of the Employer's Representative.
- 20) The Provisional Sum included and so designated in the BOQ shall be expended in whole or in part at the direction and discretion of the Employer's Representative in accordance with the Conditions of Contract. It will be used by the Employer's Representative for nominated sub-contractors, line agencies, installation of power connections/power feeder by the electricity department, third party inspecting agencies, charges levied by statutory electrical, telephone, or other authorities, or for other miscellaneous works. The use of the Provisional Sum will also be for relocation of utilities above or underground that conflict with the existing or permanent line or level of the Works, independent sampling and laboratory testing, as directed by the Employer's Representative, replacement or compensation for plants and trees removed due to the Worksetcas directed by the Employer's Representative.
  - Metric System and Abbreviations
    1. Millilitre -ml
    2. Million Litres per Day- mld
    3. Million Litre -ML
    4. Litre- ltr
    5. Linear meter -m
    6. Gram -gm
    7. Square metre -m<sup>2</sup>
    8. Cubic metre -m<sup>3</sup>
    9. Number- No.
    10. Kilogram- kg

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

11. Lump Sum- LS
12. Indian Rupees -Rs
13. Millimetre -mm
14. Square Centimetre- cm<sup>2</sup>
15. Square Millimetre -mm<sup>2</sup>

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

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Contractor

Procuring Entity / Employer

## Financial Proposal Covering Letter

(To be submitted on the Letterhead of the Bidder)

Date: dd/mm/yyyy To

**Managing Director**  
**Cochin Smart Mission Limited (CSML)**  
**10<sup>th</sup> Floor, Revenue Tower, Park Avenue,**  
**Kochi - 682 011, India.**

**Sub: Bid for RFP for Development of Smart Roads in Ernakulam ABD area under Smart City Mission, Kochi**

Dear Sir,

1. We, the undersigned bidder, Having read & examined in detail, the Bidding Document, the receipt of which is hereby duly acknowledged, I/ we, the undersigned, offer to supply/ work as mentioned in the Scope of the work, Bill of Material, Technical Specifications, Service Level Standards & in conformity with the said bidding document for the same.
  2. I / We undertake that the prices are in conformity with the specifications prescribed. The quote/ price are inclusive of all cost likely to be incurred for executing this work. The prices are inclusive of all type of govt. taxes/duties as mentioned in the financial bid (BoQ).
  3. I / We undertake, if our bid is accepted, to deliver the goods & services in accordance with the delivery schedule specified in the RFP.
  4. I/We undertake to successfully operationalize the entire solution as per scope of work mentioned in the RFP document.
- I/ We have examined and have no reservations to the Bidding Documents, including any corrigendum/addendums issued by CSML;
6. I/We understand that any additional hardware and software required to make the entire solution operational shall have to be provided by us.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

7. I/ We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee as prescribed in the RFP.
8. I / We agree to abide by this bid for a period of 180 days from the date of bid submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
9. Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award shall constitute a binding Contract between us.
- 10.I/ We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.
- 11.We understand that CSML shall take into account all Taxes including GST, Duties & Levies for the purpose of evaluation & selection of L-1 bidder
- 12.We understand that you are not bound to accept the lowest or any bid you may receive. We agree to all the terms & conditions as mentioned in the RFP document and submit that we have not submitted any deviations in this regard.

In witness thereof, I/we submit this Bid under and in accordance with the terms of the RFP document.

Date: Place:

Yours  
faithfully,

(Signature of the Authorized  
signatory) (Name and designation of the  
Authorized signatory)

Name and seal of Bidder/Lead Member

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Technical Proposal / Bid

- **Site Organization**
- **Method Statement**
- **Mobilization Schedule**
- **Work Plan & Construction Schedule**
- **Equipment**
- **Personnel**
- **Others**

***Bidder shall follow the applicable procedure indicated below:***

<i>Submission of tender through</i>	<i>Procedure to be followed by Bidder</i>
<i>e-tendering (through e- procurement portal <a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>)</i>	<i>Technical proposal consisting of above mentioned items indicated in the following forms is to be downloaded, particulars are to be filled, scanned &amp; uploaded by the Bidder, to the e-tender website "<a href="http://www.etenders.kerala.gov.in">www.etenders.kerala.gov.in</a>" along with the Bid.</i>

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Site Organization

(Bidder shall insert the Site Organization information)

The Bidder shall supply a table of personnel and a chart showing the proposed organization to be established for (i) carrying out the construction works during all phases of works included under this Contract package like mobilization; preparation of Service Improvement Plan; design, drawing, construction, commissioning) and operation and maintenance period (if included) separately.



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### Method Statement

(Bidder shall insert the Method Statement complying to the following)

1. The bidder is required to submit Approach and Method Statement for carrying out all the activities under integrated infrastructure development project.
2. The activities for methodology shall also include following:
  - (i) Surveys or confirmatory surveys (as applicable) including topographic, geotechnical, underground utility surveys etc
  - (ii) Survey for roads and associated infrastructure
  - (iii) Designs and drawings;
  - (iv) Preparation of service improvement plan (SIP), including phasing of works, and drawings
  - (v) Implementation schedule along with methodology as per scope of works:
  - (vi) Operation Services:
  - (vii) Safeguard activities;
  - (viii) Any other activities

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### **Mobilization Schedule**

(Bidder shall insert the Mobilization Schedule)

The Bidder shall submit mobilization and de-mobilization schedule of personnel and equipment in detail for all phases of works. The mobilization schedule should include mobilization of skilled and unskilled manpower, different machineries and equipment, materials, as required in each Phase.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### Work Plan and Construction Schedule

(Bidder shall insert the Work plan and Construction Schedule)

The Contractors will submit detailed work plan as part of Technical bid covering all sections of work to achieve sectional and full work key milestones as shown in Employer's Requirement

The Bidder shall prepare and submit overall construction schedule. The construction schedule shall be designed and documented in a series of tasks and task assignments complete with projected completion target dates with the aid of computer operated management software like Microsoft project office, Primavera or latest by using Gantt charts and PERT diagrams to allow all actors to know their contribution towards fulfilling the Employer's Requirement.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Equipment

#### Form-EQU: Equipment

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 (Qualification Criteria) & Section V (Employer's requirements / Works Requirements)**. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

*The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.*

*Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.*

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
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

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Contractor

Procuring Entity / Employer

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Format for Undertaking on deployment of equipment**

(affidavit on non-judicial stamp paper of Rs 200 duly Notarised by the Notary Public)  
Undertaking

To  
Managing Director  
Cochin Smart Mission Limited (CSML)  
10th Floor, Revenue Tower,  
Park Avenue, Kochi - 682 011, India.

Sub : Bid for "Development of Smart Roads & Other Roads in Ernakulum / West Kochi under Smart City Mission, Kochi"  
NIT Reference No: XX

Dear Sir,  
I / We .....having the registered office at .....declare that I / We shall abide by the conditions set forth therein at clause no 1.7 Schedule-Equipment of Section III Qualification Criteria. We confirm that shall deploy required equipment's as per requirement during the execution of work as mentioned in the tender document against Civil works. I / We further confirm that minimum equipment's to execute electrical work shall be directly deputed by me/us.

Signature of the Tenderer  
With Seal

Place: ----- Signed by: -----

Date: -----

(Name of authorized representative)  
Name of bidder  
Attested by: -----

(Notary Public)

\* fill and retain appropriate

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Personnel

#### Form PER-1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements stated in **Section III (Qualification Criteria) & Section V (Employer's requirements / Works Requirements)**. The data on their experience should be supplied using the Form below for each candidate.

*The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.*

*Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.*

1.	Title of position*
	Name
2.	Title of position*
	Name
3.	Title of position*
	Name

\*As listed in **Section III (Qualification Criteria) & Section V (Employer's requirements / Works Requirements)**.

**Section IV. Bidding Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

**Format for Undertaking on deployment of competent staff on company letter head**

**Undertaking**

To  
Managing Director  
Cochin Smart Mission Limited (CSML)  
10th Floor, Revenue Tower,  
Park Avenue, Kochi - 682 011, India.

Sub: Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"  
NIT Reference No: XX

Dear Sir,

I / We .....having the registered office at  
.....declare that I / We shall abide by the conditions set forth  
therein at clause no 1.6 Schedule Personnel of Section III Qualification Criteria. We confirm that we  
shall directly employ & depute minimum no of competent key staff as per the qualification &  
experience mentioned in the tender document against Civil works. I / We further confirm that  
minimum following key personnel to execute & supervise electrical work shall be directly  
employed & deputed by me/us.

Signature of the  
Tenderer  
with Seal

Place: -----  
Date: -----  
-----

Signed by:

-----

(Name of authorized representative)  
Name of bidder  
Attested by:

-----

(Notary Public)

\* fill and retain appropriate



**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

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

<b>Name of Bidder</b>
-----------------------

<b>Position</b>		
<b>Personnel information</b>	<b>Name</b>	<b>Date of birth</b>
	<b>Professional qualifications</b>	
<b>Present employment</b>	<b>Name of employer</b>	
	<b>Address of employer</b>	
	<b>Telephone</b>	<b>Contact (manager / personnel officer)</b>
	<b>Fax</b>	<b>E-mail</b>
	<b>Job title</b>	<b>Years with present employer</b>

Summarize professional experience over the last 20 years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

<b>From</b>	<b>To</b>	<b>Company / Project / Position / Relevant technical and management experience</b>

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Bidders Qualification

To establish its qualifications to perform the contract in accordance with **Section III (Qualification Criteria)** the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

#### Form ELI – 1: Bidder’s Information Sheet

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

Bidder’s Information	
<b>Bidder’s legal name</b>	
<b>In case of JV, legal name of each partner</b>	
<b>Bidder’s country of constitution</b>	
<b>Bidder’s year of constitution</b>	
<b>Bidder’s legal address in country of constitution</b>	
<b>Bidder’s authorized representative</b>  (name, address, telephone numbers, fax numbers, e-mail address)	
<b>*Uploaded the copies of the following original documents.</b>	
<input type="checkbox"/> 1. In case of single entity, articles of incorporation or constitution of the legal entity named above, in accordance with <b>Sub-Clause 3.1 &amp; 3.2 ITB</b> .	
<input type="checkbox"/> 2. Authorization to represent the firm or JV named in above, in accordance with <b>Sub-Clause 20.2 ITB</b> .	
<input type="checkbox"/> 3. In case of JV, JV agreement, in accordance with <b>Sub-Clause 3.1 &amp; 5.2 ITB</b> .	
<input type="checkbox"/> 4. In case of a government-owned entity, any additional documents not covered under 1 above required to comply with <b>Sub-Clause 3.4 ITB</b> .	

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form ELI – 2: JV Information Sheet

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Each member of a JV must fill in this form**

JV / Specialist Subcontractor Information	
Bidder's legal name	
JV Partner's or Specialist Subcontractor's legal name	
JV Partner's or Specialist Subcontractor's country of constitution	
JV Partner's or Specialist Subcontractor's year of constitution	
JV Partner's or Specialist Subcontractor's legal address in country of constitution	
JV Partner's or Specialist Subcontractor's authorized representative information  (name, address, telephone numbers, fax numbers, e-mail address)	

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### JV / Specialist Subcontractor Information

**\*Uploaded the copies of the following original documents.**

- 1. Articles of incorporation or constitution of the legal entity named above, in accordance with **Sub-Clause 3.1 & 3.2 ITB**
- 2. Authorization to represent the firm named above, in accordance with **Sub-Clause 20.2 ITB**.
- 3. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with **Sub-Clause 3.4 ITB**.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form LIT – Pending Litigation

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Each Bidder or member of a JV must fill in this form**

Pending Litigation			
<input type="checkbox"/> <input type="checkbox"/> <b>No pending litigation and arbitration in accordance with Criteria 1.2.1 &amp; 1.2.2 of Section III (Qualification Criteria)</b>			
<input type="checkbox"/> <b>Below is the description of all Pending litigation and arbitration involving the bidder (or each JV member if Bidder is a JV member) in accordance with Criteria 1.2.1 &amp; 1.2.2 of Section III (Qualification Criteria)</b>			
Year	Matter in Dispute	Value of Pending Claim in INR	Value of Pending Claim as a Percentage of Net Worth

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form FIN – 1: Historical Financial Performance / Financial Situation

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

Each Bidder or member of a JV must fill in this form

	<b>Financial Data for Previous 5 Years [INR Equivalent]</b>				
	<b>Year 1: 2017-18</b>	<b>Year 2: 2016-17</b>	<b>Year 3: 2016-15</b>	<b>Year 4: 2015-14</b>	<b>Year 5: 2014-13</b>

#### Information from Balance Sheet

<b>Total Assets</b>					
<b>Total Liabilities</b>					
<b>Net Worth</b>					
<b>Current Assets</b>					
<b>Current Liabilities</b>					

	<b>Financial Data for Previous 5 Years [INR Equivalent]</b>				
	<b>Year 1: 2017-18</b>	<b>Year 2: 2016-17</b>	<b>Year 3: 2016-15</b>	<b>Year 4: 2015-14</b>	<b>Year 5: 2014-13</b>

#### Information from Income Statement

<b>Total Revenues</b>					
<b>Profits Before Taxes</b>					
<b>Profits After Taxes</b>					
<b>Return on investment (ratio of annual profitbefore taxes and the networth)</b>					

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

- \*Uploaded the copies of financial statements (balance sheets including all related notes, and income statements) for the last **five years**, as indicated above, complying with the following conditions.
  - All such documents reflect the financial situation of the legal entities comprising the Bidder or partner to a JV, and not sister or parent companies, subsidiaries or affiliates
  - Historic financial statements must be audited by a certified accountant.
  - Historic financial statements must be complete, including all notes to the financial statements.
  - Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form FIN – 2: Average Annual Construction Turnover

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Each Bidder or member of a JV must fill in this form**

Annual Turnover Data for the Last 3 Years (Civil Construction & Electrical works only)			
Year	Amount Currency	Exchange Rate	INR Equivalent
Year-1 2017-18			
Year-2 2016-17			
Year-3 2015-16			
Average Annual Construction Turnover for the Last 3 Years			

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for work in progress or completed, converted to INRs at the rate of exchange at the end of the period reported.

Contractor

Procuring Entity / Employer



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form FIN – 3: Availability of Financial Resources

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

Specify proposed sources of financing, such as liquid assets\*\*, lines of credit, and other financial resources (means other than any Contractual advance payments), available to meet the financial resources requirements indicated in **Form Fin-4 ie. the total construction cash flow demands of the subject contract or contracts** as indicated in **Section III (Qualification Criteria)**. **Each Bidder or member of a JV must fill in this form**

Financial Resources		
Sl. No.	Source of financing	Amount (INR equivalent)
1		
2		
3		

\*\*Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within one year.

Note:

- i) The bidder shall provide supporting documents like letter from the Banks for the revolving line of credit facility etc specific to the project (in format **Form FIN-5**) if applicable for its declared availability of financial resources.
- ii) Bidder shall provide details on available credit facility from each source of financing after utilizing to the commitments

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form FIN – 4: Current Contract Commitments / Works in Progress

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

Bidder (or each JV partner) should provide information indicated below in order to calculate the aggregated financial resources requirement, which equals the sum of: (i) the Bidder's (or each JV partner's) 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 and (ii) financial resources requirement for subject contract as determined by the Employer. Bidder must also disclose any other financial obligations that could materially affect the implementation of subject contract if such contract were to be awarded to the Bidder.

Current Contract Commitments						
Sl. No.	Name of Contract	Employer's Contact Address, Tel, Fax	Value of Outstanding Work (B**) <sup>q</sup> [Current INR Equivalent]	Estimated Completion Date	Remaining Contract period in months(A*) <sup>p</sup>	Two months financial requirement [2 x B / A]
1						
2						
3						
4						
*A	Cumulative Financial Resources Requirement for two months for Current Contract Commitments <sup>r</sup>					INR..... .....
**B	Financial Resources Requirement for Subject Contract (as indicated in <b>Section III (Qualification Criteria)</b> ).					<b>INR 13.10 CRORE</b>
A + B	Financial Resources Requirement (Sum of A and B)					INR..... .....

**p:** Remaining contract period to be calculated from 28 days prior to bid submission deadline.

**q:** Remaining Outstanding Contract Values to be calculated from 28 days prior to the bid submission deadline.

**r:** Bidder should calculate this amount based on the sum of Monthly Financial Resources Requirements for Each Current Works Contract based on the following calculation:

$\frac{2X \text{ Estimated Contract Value (Inclusive of Taxes and Duties)}}{\text{Completion Period in Months}}$
--

Contractor

Procuring Entity / Employer

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Form FIN – 5: Sample Form for assured revolving line of credit facility**

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**(To be submitted by a Reputed Bank on the Bank’s Letter head)**

**Date:** (Insert Date)

**To: Managing Director,**  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower,  
Park Avenue,Kochi 682011.

**Subject: Letter of Assurance for Revolving line of credit facility for INR.....**

Dear Sir,

**WHEREAS** \_\_\_\_\_ [name and address of Bidder] (hereinafter called the "Bidder") intends to submit a bid for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi (name of contract work)" under the Managing Director, Cochin Smart Mission Limited (CSML) (hereinafter called the "Employer") in response to the Invitation for Bids issued by the Managing Director, Cochin Smart Mission Limited (CSML)through IFB no. CSML/Main Road/RFP/003 Date: 12/02/2019; and

**WHEREAS** the Bidder has requested that an assured revolving line of credit be provided to it for executing the Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi (name of contract work) In the event that the Contract is awarded to it; then

**KNOW ALL THESE PEOPLE** by these presents that We \_\_\_\_\_ [name of Bank] of \_\_\_\_\_ [name of Country] having our registered office at \_\_\_\_\_ [address of registered office] are willing to provide to \_\_\_\_\_ (the Bidder) a sum of up to \_\_\_\_\_ [amount of guarantee in figures and words] as an assured revolving line of credit for executing the Works under Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi(name of contract work) -----should the Bidder be awarded the contract based on its tendered prices.

We understand that this assurance may be taken into consideration by the Employer during evaluation of the Bidder’s financial capabilities, and further assure that we intend to maintain this revolving line of credit until such time as the Works are completed and taken over by the Employer.

**SEALED** with the Common Seal of the said Bank on the \_\_\_\_ day of \_\_\_\_\_, 2018.

Date: \_\_\_\_\_ Signature of the Bank: \_\_\_\_\_

Witness: \_\_\_\_\_ Seal: \_\_\_\_\_

**[Signature, name and address]**

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form FIN -6: Available bidding capacity Information and declaration

*The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.*

*The bidder shall have to submit an affidavit duly signed by the CA or auditors of the company on non judicial stamp paper of Rs 200 duly Notarised by the Notary Public to the effect that he has considered all ongoing projects to be completed in next three years.*

*Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.*

*(To be submitted by bidder through affidavit as explained)*

Availability of Bidding Capacity should be atleast equal to **INR 52.1 Crore** (as indicated in **Section III (Qualification Criteria)**).

Available bid capacity will be evaluated using following formula stated below:

$$\text{Bidding capacity} = 2 \times A \times N - B$$

Where

A = maximum annual construction turnover in last five financial years taking into account the completed as well as works in progress (updated to the current price level, rate of inflation shall be **7 % per year**).

N = Number of years prescribed for completion of works for which bids has been invited which is **1.25 years**

B= Value at current price level of existing commitments and ongoing works to be completed during the next **3 years**. Bidders will give a calculation for the same.

Bidders will submit an undertaking in original confirming that the details of all such works have been provided either being executed in their name or being executed as joint venture within India or abroad (bidder's share).

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form EXP – 1: General Construction Experience

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Each Bidder or member of a JV must fill in this form**

General Construction Experience				
Starting Month Year	Ending Month Year	Years	Contract Identification and Name Name and Address of Employer Brief Description of the Works Executed by the Bidder	Role of Bidder

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Form EXP – 2(a): Specific Construction Experience**

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Fill up one (1) form per contract.**

Contract of Similar Size and Nature			
Contract No . . . . . of . . . . .	Contract Identification		
Award Date	Completion Date		
Role in Contract	Contractor	Management Contractor	Subcontractor
Total Contract Amount	Equivalent INR.....		
If partner in a JV or subcontractor, specify participation of total contract amount	Percent of Total	Amount	
Employer's Name Address Telephone/Fax Number E-mail			
Description of the similarity in accordance with Criteria 1.4.2 of Section III			

Reference page Number. of copy of work order completion certificate in support of above experience:

\*substantially completed means:

- (i) Contractor has completed the works but could not commission the same because of hindrances beyond the control of contractor or
- (ii) Contractor has completed 90 % of the Contracted work (both physical and financial) or
- (iii) Contractor has completed the work and commissioned the works atleast for the amount required for qualification, out of large size contract

**Contractor**

**Procuring Entity / Employer**

**Section IV. Bidding Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

**Form TECH 1: Draft Format for Undertaking on Liquidated Damages**

*The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.*

*Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.*

**Undertaking**

*(Bidder or each partner of JV will shall submit separate undertaking in support of this requirement)*

\*We (name of bidder)/ (the Bidder/JV partner of bidding entity) undertake and certify that final Liquidated Damages (LD) due to poor performance **has been imposed** to the maximum value of eligible LD in .....number of packages out of .....number of contracts completed in last 10 years (from 1<sup>st</sup> April, 2008 to bid submission date).

\*We (name of bidder) (the Bidder/JV partner of bidding entity) undertake and certify that final Liquidated Damages (LD) due to poor performance, **has not been imposed** to the maximum value of eligible LD in more than **10% of contracts completed in last 10 years** (from 1st April, 2008 to bid submission date).

Place: -----

Signed by:

Date: -----

-----

---

(Name of authorized representative)

Name of bidder

Attested by:

-----

(Notary Public)

*\* fill and retain appropriate*

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Form TECH 2: Draft format for Undertaking on Rescind / Terminated contracts**

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

**Undertaking**

(Bidder or each partner of JV will shall submit separate undertaking in support of this requirement)

I/We (name of bidder) (the Bidder/JV partner of bidding entity) undertake and certify that \*not a single contract has been Rescind/ Terminated due to poor performance of our firm or \*.....number of contracts were Rescind/ Terminated due to poor performance of our firm out of .....number of contracts in hand of our firm during last 10 years (from 1st April, 2008 to bid submission date).

We (name of bidder) (the Bidder/JV partner of bidding entity) further undertake and certify that Rescind/ Terminated contracts due to poor performance of our firm are not more than **5%** of contracts in hand during last **10 years** (1 April, 2008 to bid submission date).

Place: -----

Signed by:

Date: -----

-----

---

(Name of authorized representative)

Name of bidder

Attested by:

-----

(Notary Public)

\* fill and retain appropriate



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form TECH 3: Draft format for Undertaking on Corporate Debt Restructuring

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

#### Undertaking

(Bidder or each partner of JV will shall submit separate undertaking in support of this requirement)

I/We (name of bidder) (the Bidder/JV partner of bidding entity) undertake and certify that our firm (i) has not applied for Corporate Debt Restructuring (CDR) (ii) is not facing follow up action of CDR (iii) is not facing recovery proceedings from Financial Institutions and (iv) are not facing winding up proceedings or those under BIFR in the last **5 financial years** (2013-14, 2014-15 2015-16, 2016-17 and 2017-18) till the date of bid submission.

Place: -----

Signed by:

Date: -----

-

-----

-----

--

(Name of authorized representative)

Name of bidder

Signed by:

Attested by

-----

--

-----

Chartered Accountant/Auditor

(Notary Public)

:

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form of Bid Security

#### (Bank Guarantee)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*[Bank's Name and Address of Issuing Branch or Office]*

**Beneficiary:** **Managing Director,**  
**Cochin Smart Mission Limited (CSML),**  
**10<sup>th</sup> Floor, Revenue Tower, Park Avenue,**  
**Kochi 682011**

**Date:** \_\_\_\_\_

**BID GUARANTEE No.:** \_\_\_\_\_

We have been informed that \_\_\_\_\_ (hereinafter called "the Bidder") has submitted to you its bid dated \_\_\_\_\_ (hereinafter called "the Bid") for the execution of \_\_\_\_\_ under Invitation for Bids No. \_\_\_\_\_ ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we \_\_\_\_\_ (name of Bank) hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of \_\_\_\_\_ (\_\_\_\_\_) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid / Letter of Technical bid; or
- (b) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458.

---

*[signature(s)]*

*[Note: In case of a Joint Venture, the Bid-Security must be in the name of JVA comprising all partners to the Joint Venture that submits the bid.]*

---

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Declaration Regarding Deemed Export Benefits

The following form is to be downloaded, particulars are to be filled, scanned & uploaded by the Bidder, to the e-tender website "[www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)" along with the Bid.

Note:\* The detailed procedure for downloading / uploading the documents will be available in Help wizard & FAQ of the above mentioned Website.

### Declaration Regarding Deemed Export Benefits / Customs/Excise Duty Exemption For Materials / Construction Equipment Brought For The Works

#### Name of the Project:

(Bidder's Name and Address)

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

To :

**Managing Director,  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi 682011**

Dear Sir,

CERTIFICATE FOR IMPORT (PROCUREMENT OF GOODS/ CONSTRUCTION EQUIPMENT).

1. We conform that we are solely responsible for obtaining deemed export benefits / 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 Project Authority certificates in terms of the Government of India Central Excise Notification No. 108/95 and Customs Notification No. 85/99 & export & import policy of the Government of India.
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.
<b>Goods</b>						
[a]						

Contractor

Procuring Entity / Employer

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

(b)						
(c)						
[b]Others						
<b>Construction equipment</b>						
(a)						
(b)						
(c)						

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 Bill of Quantities and the construction programme and methodology as furnished by us along with the bid.
6. We conform that the above goods will be exclusively used for the construction of the above work 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:**  
**Place:**

**Signature.....**  
**Printed name.....**  
**Designation.....**  
**Common seal.....**

*Note: i) This certificate will be issued within 60 days of signing of contract and no subsequent changes will be permitted.*  
ii) The format of requirement listed above may be modified, if necessary, in terms of the export & import policy of Government of India in force.

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Form PRE-BID: Format of sending pre-bid queries

**NIT Reference No: XX**

Bidder's Request For Clarification				
Sr. No.	Clause No.	Page No.	Content of Bid document Requiring Clarification	Change Requested/ Clarification required
1				
2				
3				
4				
5				

Name and complete official address of Organization submitting query / request for clarification	Telephone, Fax and E-mail of the organization Tel: Fax: Email:
---	---

Signature:  
Name of the Authorized signatory:  
Company seal:  
Date and Stamped

**Note: Bidder(s) are requested to send the queries in PDF with Sign and Company Seal and also in MS Word / Excel for making consolidation process easy.**

**Format for Declaration by the bidder for not being Blacklisted / Debarred**  
(To be submitted on the Letterhead of the Bidder)  
**(To be provided by Lead bidder and all members of Consortium in separate letters)**

Date: dd/mm/yyyy

To

**Managing Director,  
Cochin Smart Mission Limited (CSML)  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi - 682 011, India.**

**Subject:** Declaration for not being debarred / black-listed by Central / any State Government department in India as on the date of submission of the bid

**RFP Reference No: XX**

Dear Sir,

I, authorized representative of \_\_\_\_\_, hereby solemnly confirm that the Company \_\_\_\_\_ is not debarred / black-listed by any Central/State Government/ PSU entity in India or similar agencies globally for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices or for any other reason as on last date of submission of the Bid. In the event of any deviation from the factual information/ declaration, CSML reserves the right to reject the Bid or terminate the Contract without any compensation to the Company.

Thanking you,

Yours faithfully,

\_\_\_\_\_  
Signature of Authorized Signatory (with official seal)

Date :

Name :

Designation :

Address :

Telephone & Fax :

E-mail address

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Format for Power of Attorney

*[To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the company who is issuing the power of attorney]*

Know by all men by these presents, We \_\_\_\_\_ (Name of the Bidder and address of their registered office) do hereby constitute, appoint and authorize Mr. / Ms \_\_\_\_\_ (name and residential address of Power of attorney holder) who is presently employed with us and holding the position of \_\_\_\_\_ as our true and lawful attorney (hereinafter referred to as the "Authorized Representative") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Proposal for the **Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"** Including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre bid and other conferences and providing information/responses to CSML, representing us in all matters before CSML, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with CSML in all matters in connection with or relating to or arising out of our Proposal for the said Project and/or upon award thereof to us till the entering into of the Agreement with CSML.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorized Representative pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Authorized Representative in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ..... THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS .....DAY OF ....., 20\*\*

For \_\_\_\_\_

Name:

Designation:

Date:

Time:

Seal:

Business Address:

Witness:

1. 2. Notarized Accepted

Signature of the Applicant

(Signature, name, designation and address)

Contractor

Procuring Entity / Employer



## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### **Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"**

Accepted,

\_\_\_\_\_ (Signature)

(Name, Title and Address of the Attorney)

Note:

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- The Power of Attorney shall be provided on a stamp paper of Rs.200/- and above
- The Power of Attorney should be supported by a duly authorized resolution of the Board of Directors of the Bidder authorizing the person who is issuing this power of attorney on behalf of the Bidder.

---

#### **CERTIFICATE AS TO AUTHORISED SIGNATORIES**

I \_\_\_\_\_, the Company Secretary of \_\_\_\_\_, certify that \_\_\_\_\_ who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body.

Date:

Signature:

(Company Seal) (Name)

---

**Contractor**

**Procuring Entity / Employer**

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Format for Power of attorney in case of Consortium

**Lead Member has to submit the Power of Attorney in favour of Authorized signatory in below given format in case of Consortium.**

*[To be executed on non-judicial stamp paper of the appropriate value in accordance with relevant Stamp Act. The stamp paper to be in the name of the company who is issuing the power of attorney]*

### POWER OF ATTORNEY FOR LEAD MEMBER BY

#### CONSORTIUM MEMBER

Whereas CSML has invited Bids from interested companies for **Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"** ("Project").

Whereas, -----, and ----- (collectively the "Consortium") being members of the Consortium are interested in offering for the services in accordance with the terms and conditions of the Request for Proposal document (RFP) and other connected documents in respect of the Project, and;

Whereas, it is necessary under the RFP document for the members of the Consortium to designate one of them as the Lead Member with all necessary power and authority to do for and on behalf of the Consortium, all acts, deeds and things as may be necessary in connection with the Consortium's Bid for the Project.

Whereas, we have decided that M/s ----- shall be Lead Member of this Consortium.

NOW THEREFORE KNOW ALL MEN BY THESE PRESENTS

We, ----- having our registered office at -----, (hereinafter referred to as the "Member") do hereby designate, nominate, constitute, appoint and authorize ----- having its registered office at -----, being one of the members of the Consortium, as the Lead Member and true and lawful attorney of the Consortium (hereinafter referred to as the "Attorney"). We hereby irrevocably authorise the Attorney (with power to sub-delegate) to conduct all business for and on behalf the Consortium and any one of us during the Bid process and, in the event the Consortium is awarded the Contract, during the execution of the project, and in this regard, to do on our behalf and on behalf of the Consortium, all or any of such acts, deeds or things as are necessary or required or incidental to the selection of the Consortium, including but not limited to signing and submission of all Applications, Proposals and other Documents and writings, participate in pre-proposal and other conferences, respond to queries, submit information/ documents, sign and execute contracts and undertakings consequent to acceptance of Bid of the Consortium and generally to represent the Consortium in all its dealings with the CSML and/or any other Government Agency or

**Contractor**

**Procuring Entity / Employer**

**Section IV. Bidding Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

any person, in all matters in connection with or relating to or arising out of the Consortium's Bid for the above Project and/or upon award thereof till the Contract Agreement is entered into with the CSML.

AND hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us/Consortium.

IN WITNESS WHEREOF WE THE MEMBER ABOVE NAMED HAVE

EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF

.....20

For .....

(Name & Title)

Witnesses:

- 1.
- 2. ....

(To be executed by each Member of the Consortium)

**Note:**

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder :

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Format of Consortium Agreement

#### DRAFT MEMORANDUM OF UNDERSTANDING EXECUTED BY MEMBERS OF THE CONSORTIUM

*[On Non-judicial stamp paper duly attested by notary public]*

This Memorandum of Understanding (MoU) entered into this day of [Date] [Month] 2018 at [Place] among \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_\_") and having office at [Address], India, as Party of the First Part and \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_\_") and having office at [Address], as Party of the Second Part and \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_\_") and having office at [Address], as Party of the Third Part.

The parties are individually referred to as Party and collectively as Parties.

WHEREAS CSML, has issued a NIT [Date] from the Applicants interested in **Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"**:

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to the Parties' rights and obligations towards each other and their working relationship.

AS MUTUAL UNDERSTANDING OF THE PARTIES, IT IS HEREBY AGREED AND

DECLARED AS FOLLOWS:

- i. The purpose of this Agreement is to define the principles of collaboration among the Parties to:
  - a. Submit a response jointly to Bid for the Bid **"Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"** as a Consortium.
  - b. Sign Contract in case of award.
  - c. Provide and perform the supplies and services which would be ordered by the Authority pursuant to the Contract.
- ii. This Agreement shall not be construed as establishing or giving effect to any legal entity such as, but not limited to, a company, a partnership, etc. It shall relate solely towards the Authority for **"Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"** for and related execution works to be performed pursuant to the Contract and shall not extend to any other activities.
- iii. The Parties shall be jointly and severally responsible and bound towards the Authority for the performance of the works in accordance with the terms and conditions of the RFP document, and Contract.
- iv. ----- (Name of Party) shall act as Lead Member of the Consortium. As such, it shall act as the coordinator of the Party's combined activities and shall carry out the following functions:
  - a. To ensure the technical, commercial and administrative co-ordination of the work package

Contractor

Procuring Entity / Employer

## Section IV. Bidding Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- b. To lead the contract negotiations of the work package with the Authority.
- c. The Lead Member is authorized to receive instructions and incur liabilities for and on behalf of all Parties.
- d. In case of an award, act as channel of communication between the Authority and the Parties to execute the Contract
- v. That the Parties shall carry out all responsibilities as Developer in terms of the Project Agreement.
- vi. That the broad roles and the responsibilities of each Party at each stage of the Bidding shall be as below:  
Party A: \_\_\_\_\_  
Party B: \_\_\_\_\_  
Party C: \_\_\_\_\_
- vii. That the broad roles and the responsibilities of each Party at each stage of the project execution shall be as below:  
Party A: \_\_\_\_\_  
Party B: \_\_\_\_\_  
Party C: \_\_\_\_\_
- viii. That the Parties affirm that they shall implement the Project in good faith and shall take all necessary steps to see the Project through expeditiously.
- ix. That this MoU shall be governed in accordance with the laws of India and courts in Kerala shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU duly executed on the date and year above mentioned.

(Party of the first part) (Party of the second part)

(Party of the third part)

Witness:

i. \_\_\_\_\_

ii. \_\_\_\_\_

**Contractor**

**Procuring Entity / Employer**

**Section IV. Bidding Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**DECLARATION FORM**

(To be submitted on the Letterhead of the responding firm)

Date: dd/mm/yyyy

To

**Managing Director  
Cochin Smart Mission Limited (CSML)  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi - 682 011, India.**

**Sub : Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi"**

NIT Reference No: XX

Dear Sir,

I / We .....having the registered office at .....declare that I / We have carefully read all the terms and conditions of Tender floated by the CSML for the above work strictly conforming to the specification as given in the Tender Document and I / We shall abide by all the conditions set forth therein. I / We also undertake to take back the rejected defective Goods & Works at our risk & cost and replace / rectify the same within the stipulated time.

**Signature of the Tenderer  
With Seal**

**Contractor**

**Procuring Entity / Employer**

## Section V. Works Requirements / Employer's Requirements & Technical Specifications

## Section V. Works Requirements / Employer's Requirements & Technical Specifications

### 1. GENERAL INFORMATION

Cochin Smart Mission Limited (CSML) has the mandate to design, implement and maintain Urban Development projects under the Smart City Mission.

### 2. EXISTING SITUATION

Surface renewal of roads are done on a regular interval for the urban roads. Often the road surface is subject to damage due to heavy monsoon in Kerala and due to excavations for laying and relaying of underground utilities and for rectification in water supply lines, laying of new OFC, Gas pipe line etc.

Water logging is another recurring issue occurring in all roads during rainy seasons. As per the detailed investigation it was found that inadequate drains, drain slopes, gratings/openings to drain and road slopes are the reasons for water logging.

Inadequate footpaths make it almost impossible for the pedestrian to walk through the roads. There are no existing exclusive cycling tracks available in the city.

Unorganized laying of electrical line and cable networks makes the roads unsafe for pedestrians and vehicles.

### 3. CONCEPT

The objective is to provide a world class road experience to all roads users by developing 4.91 kilometers of smart roads within the ABD area. This will include upgradation and augmentation of footpath, pavements, minor bridges, providing cycle lanes, road markings, street furniture, busbay, street landscaping works, shifting of utilities, smart elements and other miscellaneous works along the smart roads. This document has been prepared for the above specified work with all the BOQ's and detailed drawings which are been incorporated in this Tender. Document is well illustrated and defined in the Drawings, Specifications, Schedule of quantities and other Contract Documents.

### 4. SCOPE OF WORK

The general character and the scope of the Work includes Procurement, construction, operation and maintenance of Smart Roads within the Smart City Kochi ABD area of Ernakulam ward numbers (62, 66 & 67) along the existing alignment of roads. Detailed list of roads are given in sub clause 4.2.

#### 4.1. CONSTRUCTION, OPERATION AND MAINTENANCE OF SMART ROADS:

CSML intends to develop 5 roads in Ernakulam central area (4.91 Km) as smart roads. The scope of work includes developing the existing roads mentioned above by upgradation and augmentation of foot path, pavements, construction of a minor bridge on Abraham Madamakkal road, provision of cycle lanes, providing Road Markings, Street Furniture, Bus bays, Street Landscaping works, utility trenching/ducting works, Construction of new drains and restoration of existing drains as per site requirements, shifting of utilities to underground trenches, foundation for street light poles, monopoles and smart poles, along with operation maintenance of landscaping works.

##### 4.1.1. ROAD DIET & SAFE STREETS:

Also known as lane-width reduction or road re-channelization is a technique in transportation planning whereby the effective width of the carriageway is reduced to achieve systemic improvements. Roads with clearly demarcated



spaces for vehicles, pedestrians, cyclists and dedicated on-street parking to minimize conflicts between vehicular and pedestrian traffic. Safe streets with walkways promoting walking as a daily activity – encouraging healthy lifestyles.

#### 4.1.2. RESILIENT STREETS:

Streets with defined utility corridor including undergrounding & overhead utilities where upgraded utilities can withstand severe natural and man-made disasters. Streets that provide infrastructure allowing safe walking experience in night through pedestrian lighting and clean public space.

#### 4.1.3. INCLUSIVE STREETS:

Streets that allow and provide multiple mobility options to its citizens including walking, cycling, driving private vehicles and commuting through public transport. Universal accessible design that allow safe walking experience to all citizens especially elderly and people with special needs.

#### 4.1.4. STREETS AS PUBLIC SPACES:

Streets that provide spaces outside our homes for social, cultural or intellectual interactions, to walk or to just breathe fresh air. Streets that reduces congestion through replacement of encroachments on streets to its designated areas and achieving low carbon emission.

#### 4.2. LIST OF SMART ROADS

Road No.	Road Name	Length(Km)
1	Bannerji Road	0.91
2	Abraham Madamakkan Road	1.11
3	Shanmugham Road	0.89
4	Park Avenue Road	1.47
5	DH Road	0.53
<b>Total</b>		<b>4.91</b>

#### 4.3. GENERAL GUIDELINES

The roads are to be constructed as per the street design attached in this document following the street design guidelines such as IRC, UTTIPEC street design guidelines, etc. issued by MoUD GoI. Inspection and testing of works shall be conducted by the employer as per latest CVC guidelines. Contractor has to follow the quality norms of IRC. Responsibility of quality of work and materials solely lies on the contractor which shall be checked by PMC, CSML and KMRL in that order. Decision of KMRL shall be final and binding in this regard. The attached road design considers the following three levels of transport (i) Pedestrian (ii) Cycle lane (iii) Public transport users and lastly the motorized vehicles. It should include the necessary infrastructures/amenities like landscaping, water supply, storm water drainage, underground utility duct etc.

-Existing Roads are either paving blocks or bituminous roads with wider carriageway widths. It is proposed to have wide carriageway as specified in typical cross-sections with overlay on existing surface. The Overlay is provided with or without scarifying depending on the site condition. The requirement of scarifying should be studied by the contractor by assessing the condition of road and levels.

Details of different utilities and services has to be ascertained as per actuals and tender drawings by the contractor.

***Note-Details and drawings given in document are for information purpose only and successful bidder shall undertake confirmatory surveys for accuracy and completeness of data. It is in scope of successful Bidder to undertake Site surveys as per requirements, Geotechnical investigations/Engineering Surveys, hydrological investigations, Underground Utility Surveying of the roads for shifting and creating new, obtaining all required approvals from the relevant authorities. Prepare Working drawings/Shop Drawings, submit maintenance manual to employer for approval before start of post construction period. The successful bidder shall have to prepare and submit both 'Working Drawings' before execution and 'As Built Drawings' after execution depicting the exact construction carried out on site, in soft and hard copy format.***

#### 4.1.5. CIVIL WORK:

The Civil works excluding Structure design also is part of Contract in following respect but not limited there of:

- (a) All the civil works mentioned in this section has to be read in conjunction with the civil scope of works and BOQ. No duplication is envisaged.
- (b) Levelling the Complete Area, earmarked for work.
- (c) RCC cable Trenches / RCC duct banks for road crossing, manholes, RCC cover slab etc. as required in the area for incoming and outgoing Cables etc.
- (d) Excavation, back filling and levelling for buried cable trenches / earth pits etc.
- (e) All materials including cement and steel required for the civil and Electrical work is in the scope of the contractual / executing agency.
- (f) The scope of civil works for bidder covers engineering, supply of labour & materials, transportation, construction and commissioning of entire civil engineering works required for installation & erection of all the Cables 11KV and 1.1 KV Cables for the project area facilities etc. as designed and / or supplied by him.
- (g) Soil excavation and back filling if required for Construction of RCC cable Trench and Cables and other works trenches as and where required.
- (h) RCC cable trench connecting the feeding and receiving substation and plot with pre-cast RCC cover slab all along & encased HDPE pipe at all the locations.
- (i) Drainage arrangement in cable trenches.
- (j) The scope of work of bidders is not limited to the major item of civil works as elaborated above but includes all civil works required for the successful completion & commissioning electrical works concerned of the project without any extra cost.

- (k) The scope of work also includes sampling & testing of construction material on the specimens taken during execution of the work. The testing shall be performed by a separate agency, approved by the engineer in charge.
- (l) Site office, cement & other construction material storage godown and fabrication yard for reinforcement, inserts etc. shall be constructed by the successful Bidders at his own cost.
- (m) All construction equipment required for execution of the work shall be arranged, procured & hired by successful Bidders at his own cost along with operations, skilled & semiskilled personnel. The successful Bidders shall also furnish a list of construction equipment to be deployed by him.
- (n) Site for storing the equipment/material within a reasonable distance from the proposed installation shall be arranged by the bidder. construction of temporary sheds/ barricades for the temporary store, site office as well as safety and security of equipment shall be in the successful Bidder's scope.

#### 4.1.6. TECHNICAL SERVICES

The following technical services shall be in the scope of the Bidder:

- (a) Liaison with Central/state Government Departments/KSEB/ CEIG or any other authorities concerned on for matters like work entrustment, vendor approvals, drawing approvals, PTCC, TA&QC approvals and any other matters connected with the work and gets the approvals within the specified time for successful completion of work for all matters including obtaining approved designs & drawings, and commissioning of the Project including all incidental costs incurred thereon. Cochin Smart Mission Limited, however, will provide only all the required administrative supports to the contractor in this regard and also would reimburse to the Contractor all the statutory charges paid to the departments like KSEB/CEIG on production of official receipts thereon.
- (b) The successful tenderer shall take the responsibility of obtaining all statutory clearances from all statutory bodies, on behalf of the Employer. (However, fee to be reimbursed by the Employer on production of documentary evidence)
- (c) Working drawing and layout engineering of Civil & structural work.
- (d) Submission of QAP and Test certificates.
- (e) Arranging inspection of the materials by the employer/ employer representative
- (f) Submission of As Built drawing after commissioning of project.
- (g) All materials /machinery/items used in the subject package shall be provided according to specification given herein. All electrical items shall be supplied from the "List of Preferred makes". Prior approval from Employer shall be taken for the equipment/ items not available in the list.

#### 5. KEY TASKS/ DELIVERABLES BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT PRIOR TO STARTING CONSTRUCTION

- 5.1.** The contractor should conduct Site surveys as per requirements, Geotechnical investigations/ Surveys, hydrological investigations for all the components of the work as per Employers requirement and submit the same to employer for review and approval before starting construction.
- 5.2.** The contractor shall conduct necessary surveys to access various quantities based on actual road conditions and submit the same for approval with levels, graphs and detailed calculation prior to starting the works. The contractor should obtain approval for initial levels prior to starting any of the works.

- 5.3. The contractor shall survey the drains including width and depth at various sections. Levels of drain bottom to be taken to assess the flow direction of existing drains. The contractor should study the proposed drains in this document and satisfy themselves to the proposal. The contractor should make sure water logging will not occur after completion of works. If the contractor feels few more drains has to be done to avoid water logging, the same can be proposed by the successful bidder.
- 5.4. The contractor should submit a complete work programme for scope of work to be carried out.
- 5.5. The Employer Representative/PMC will supervise and monitor the progress of this phase and contractor shall provide necessary coordination. The contractor is supposed to complete submission of drawings within two months from date of handing over of site. The construction period mentioned in bid documents is inclusive of this period.
- 5.6. Preparation and Submission of Complete Bill of Materials (BOM) and quantities along with detailed technical specifications, manufacturer's details and delivery schedule at the sites in Material Approval request format for approval of the PMC.
- 5.7. Preparation and submission of the details of the man power and machinery deployment for the project.
- 5.8. Employer will provide all the available information pertaining to these roads to the successful bidder. However, contractor has to validate the information provided by carrying of field/site surveys/other relevant surveys as deemed necessary independently. The contractor shall conduct site survey and investigation of the roads and prepare survey report highlighting the site feasibility, Contract drawings, and site specific requirements / dependencies for successful implementation.
- 5.9. Contractor has to prepare the documentation for showcasing the daily and weekly progress and the quantification of work done, it is mandatory to submit the progress report in hard copy and soft copy. Monthly progress reports with Photos to be submitted monthly.
- 5.10. There will be no additional payments for preparation of Working drawings, GFCs, surveys.
- 5.11. The contractor should satisfy himself completely to the site conditions, drawings and design supplied as part of Tender Document

## 6. TESTING AND INSPECTIONS

Testing and inspections shall be carried out as per technical specification and in accordance with relevant codes

## 7. SPECIAL REQUIREMENTS TO BE CONSIDERED

### 7.1. Drawings, Specifications and Interpretations

All the Design Drawings required for the execution of the work may not be available immediately after awarding the work. Some of the drawings which are available will be supplied in the first instance and the remaining drawings as required progressively and in accordance with the program of work, well in time for procurement of materials and execution. The Contractor shall be issued 2 copies of each drawing.

The Contractor shall give 1 month notice to the CSML/PMC of any further drawings or specifications that may be required for the execution of the work or otherwise under the Contract, well in advance. **Basic design drawings will be released to the Contractor progressively depending on the actual accomplishment & requirement at Site.**

All-important drawings are to be mounted on boards and placed in racks and indexed.

As and when revision drawings are issued, the **CONTRACTOR** shall withdraw all superseded drawings from the site. If, after issue of revision drawings, faulty construction is done as per superseded drawings, then, the

faulty work shall be pulled down and reconstructed by the **CONTRACTOR** to conform to revision drawings, all at the risk, cost and expenses of the **CONTRACTOR**. No extension of time will be admissible on this account.

The drawings included/available with the tender are to be used for general guidance only. These drawings are broadly indicative of the work to be carried out. These drawings are not the "Construction Drawings" and details indicated there in are for guidance only and are liable to be modified by the Engineer-in-Charge during course of actual construction. No claim what so ever shall be admissible on account of changes that may be introduced later by the Engineer-in-Charge.

In general, the Drawings shall indicate the dimensions, positions and type of construction, the Specifications shall stipulate the quality and the methods and performance criteria, and the BoQ shall indicate the rates for each item of work for evaluating change orders. However, the above Contract Documents being complementary, what is called for by any one shall be binding as if called for by all.

## 7.2. Good for Construction/Working drawings

After the award of the Contract, the Contractor shall furnish for the approval of the PMC all the GFC/Working drawings. It is the responsibility of the Contractor to prepare fully detailed GFC/Working drawings as per site condition by conducting necessary survey and submit in triplicate to PMC / CSML for approval. All GFC/Working drawings shall reflect the design intent as provided in the construction drawings and shall not be deviated without prior permission. The GFC/Working drawings shall be based on the actual Site conditions and shall take into account all coordination as may be required in order to avoid any clash or interference with other service lines or any other building features.

The GFC/Working drawings of Contractor's design of temporary works shall be fully supported by necessary design calculations wherever applicable or as directed by the CSML/PMC. Such design calculations shall be carried out by a competent agency and shall also comply with relevant Indian / International standards as applicable as listed in the technical specifications. Wherever so required, the Employer reserves the right to demand a certificate as to the correctness of the design to be issued after verification by an independent proof checking agency whom the Employer may either approve or nominate.

All charges for preparing the GFC/Working drawings, getting the same proof checked including carrying out any other modifications as necessary shall be fully covered in the quoted rates of the Contractor and no extra shall be payable for adherence of the above requirement.

The checking and approval of drawings shall not relieve the **CONTRACTOR** from the responsibility for correctness of the design, workmanship, material errors or omissions if any. No detailed GFC/Working drawing shall be accepted by the PMC unless it is complete and has been checked and approved by a qualified engineer of the contractor and is accompanied by a detailed plan showing location and all relevant details

Within one month of completion of work including specialized works the Contractor shall submit fully detailed as - built drawings to explain the installation in totality. Such as-built drawings shall be submitted to the CSML/PMC in triplicate. After scrutiny and observations by the Employer / PMC, the Contractor shall submit the final version thereof in hard copy format in triplicate as well as electronic format (CD, Pen drive) in AutoCAD Release 13 / 14. These drawings should include road elements, utilities, footpaths, cycle lanes with complete alignment and levels. These should include the list of utilities passing through the ducts and its level from the reference datum.

### 7.3. Extra items

Any item of work that does not find a place in the schedule of quantities, in the original Tender or in the accepted Tender or Contract as has been directed by the Employer / Consultant to execute, is deemed as an extra item of work. All such works that are necessary to be carried out under the direction of the Employer / Consultant by the Contractor. No such variation will violate the Contract.

Extra items of work thus carried out by the Contractor will be paid at the rates worked out by Employer / Consultant in the following manner.

Employer reserves the right to alter the Scope of Work and consequently the Contract Price shall be suitably adjusted for such changes by applying the approved rates. All change orders shall be issued by the Engineer-in-Charge and the onus shall be on the Contractor to obtain such prior written consent of the Engineer-in-Charge.

If the contractor finds, after examining the specifications and plans that extras are involved, he should give notice to the Engineer-in charge to this effect and shall proceed with the execution of the extra item only after receiving instructions in writing from Engineer-in charge and Agreement Authority.

Extra items may be classified as new, additional, substituted or altered items, depending, on their relation or otherwise to the original item or items of work.

In the case of extra items whether additional, altered or substituted, for which similar items exists in the contract, the rates shall be derived from the original item by appropriate adjustment of cost of affected components. The percentage excess or deduction of the contract rate of the original item with reference to the departmental estimated rate shall be applied in deriving the rates for such items. The Engineer's interpretation as to what is a similar class of work shall be final and binding on the Contractor.

In the case of extra items whether additional, altered or substituted and for which similar items do not exist in the contract and rates exists in the prevailing departmental data rate, the rates shall be arrived at on the basis of the departmental data rate current at on the time of ordering the extra item, after applying the tender deduction except on cost of employer's material. Tender excess, if any, will not be applied.

In the case of extra items whether additional, altered or substituted, for which the rates cannot be derived from similar items in the contract, and only partly from the departmental schedule of rates the rates for such part or parts of items which are not covered in the schedule of rates shall be determined by the Engineer-in charge on the basis of the prevailing market rates(if available in the LMR published by the Department the same shall be taken) giving due consideration to the analysis of the rate furnished by the contractor with supporting documents, including contractor's profit, overheads and other allowed charges if any. This shall be added on to the departmental rate (including contractor's profit, overheads and allowed other allowed charges if any) current at the time of ordering or executing the extra item, whichever is earlier for the other part the item for which rates can be derived from the schedule of rates, after applying the tender deduction except on cost of departmental material and market rate items. Tender excess, if any, will not be applied.

In all the above cases, the approved rates for extra, additional, altered or substituted items shall not exceed the rate which is arrived on the basis of the prevailing local market rates of the Department (published as per Government guidelines) at the time of ordering or executing the extra item whichever is earlier.

Wherever the term "Departmental data rate" appears, it shall mean the rate derived from the prevailing Departmental schedule of rate (Prevailing Delhi schedule of rates without any provision for escalation if applicable)

## **7.4. TESTING**

### **7.4.1. GENERAL**

Inspection and testing of work shall be done by employer or its representative in accordance with CVC Guidelines.

The Contractor shall provide and perform all forms of testing as specified in technical specifications and "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION), 2013, issued by the Ministry of Road Transport and Highways, and published by the Indian Roads Congress along with any other addendum/corrigendum issued up to 28 days before the final date of submission of the bid.

Manufacturer test reports where ever applicable should be conducted and submitted

Factory inspection for electro mechanical items where ever applicable shall be arranged by the contractor.

All testing procedures shall be submitted at least thirty (30) days prior to conducting any Test. The Testing procedures shall show unambiguously the extent of testing covered by each submission, the method of testing, the Acceptance Criteria, the relevant drawing (or modification) status and the location.

The testing Procedures shall be submitted, as required, by the Contractor during the duration of the contract to reflect changes in system design or the identification of additional testing requirements.

The Engineer shall have the facilities for monitoring all tests and have access to all testing records. Ample time shall be allowed within the testing programmes for necessary alterations to equipment, systems and designs to be undertaken, together with re-testing prior to final commissioning.

All costs associated with the Testing shall be borne by the Contractor, unless otherwise specified, including the services of any specialised personnel or independent assessors. The Contractor shall also bear any expenses incurred due to resetting caused by defects or failure of equipment to meet the requirements of the Contract in the first instance.

Unless agreed in writing by the Engineer, the personnel engaged on testing shall be independent of those directly engaged in the design or installation of the same equipment.

All testing equipment shall carry an appropriate and valid calibration labels.

## **7.5. RECORDS**

### **7.5.1. PROGRESS PHOTOGRAPHS**

The Contractor shall provide monthly/Daily progress photographs with geotagging and date watermark which have to be properly recorded to show the progress of the works to the Engineer. The photographs, of not less than 72 in number, shall be taken on locations agreed with the Engineer to record the exact progress of the Works along with the monthly progress report. Two sets of photographs shall be provided on CD ROM/Pen drive in JPEG format.

The Contractor shall mount each set of each month's progress photographs in a separate album of a type to which the Engineer has given his consent and shall provide for each photograph two typed self-adhesive labels,

one of which shall be mounted immediately below the photograph and one on the back of the photograph. Each label shall record the location, a brief description of the progress recorded and the date on which the photograph was taken.

All photographs shall be taken by a skilled photographer whose name and experience shall be submitted to the Engineer for consent and approval received. Processing shall be carried out by a competent processing firm to the satisfaction of the Engineer.

The Contractor shall ensure that no photography is permitted on the Site without the agreement of the Engineer. Contractor should be aware of the local regulations and conditions with regard to Photography in some "RESTRICTED AREA" in Kochi.

#### **7.5.2. RECORDS OF WAGE RATES**

The Contractor shall keep monthly records of the average, high and low wage rates for each trade/tradesman employed on the Site and records shall be made available to the Engineer during inspection. The payment to Labour shall be made through Bank only. Contractor shall comply with the labour rules, minimum wages rules and other statutory compliances. Contractor should obtain a labour license for the project prior to starting the works.

#### **7.5.3. MATERIALS**

Materials and goods for inclusion in the Permanent Works shall be new unless the Engineer has consented otherwise. Preference shall be given to local materials where available.

Certificates of tests by manufacturers which are to be submitted to the Engineer shall be current and shall relate to the batch of material delivered to the Site. Certified true copies of certificates may be submitted if the original certificates could not be obtained from the manufacturer.

Parts of materials which are to be assembled on the Site shall be marked to identify the different parts.

Materials which are specified by means of trade or proprietary names may be substituted by materials from a different manufacturer which has received the consent of the Engineer provided that the materials are of the same or better quality and comply with the specified requirements.

Samples of materials submitted to the Engineer for information or consent shall be kept on the Site and shall not be returned to the Contractor or used in the Permanent Works unless permitted by the Engineer. The samples shall be used as a mean of comparison which the Engineer shall use to determine the quality of the materials subsequently delivered. Materials delivered to the Site for use in the Permanent Works shall be of the same or better quality as the samples which have received consent.

#### **7.6. PROVISION AND DISPOSAL OF EARTHWORKS MATERIAL AND CONSTRUCTION WASTE.**

The Contractor shall be responsible for the disposal of all classes of earthworks material/Construction waste required for the Works, whether sourced from the excavations within the Contract or obtained from any other sources, which are located outside the Site, for which the Engineer has given the consent. The contractor should obtain written instruction/pass from engineer in charge with date, loading location and unloading location for disposing the waste

For fill or dumping sites, the Contractor shall prepare a land plan with details of surface drainage requirements, final formation levels, spreading and compaction of the fill during dumping acceptable to the



Engineer. The Contractor shall also provide security for such sites. The dumping sites to be used by the Contractor shall be as directed by the Engineer.

All excavated material, excluding waste material, bentonite fluid and bentonite contaminated material shall be disposed of at the appointed site only. This material shall be placed and compacted in accordance with the Construction Specification for Earth Works or as otherwise directed by the Engineer's Representative. The disposal of waste material, bentonite fluid and material contaminated with bentonite shall be the full responsibility of the Contractor and these materials shall be disposed of by the Contractor at an approved location. The dumping sites, if provided by the Employer, shall not be used for disposal of waste material, bentonite fluid or material contaminated with bentonite.

Rock deposited as fill material at the dumpsites shall be capable of compaction with single pieces no larger than 300mm.

The contractor should make own arrangements for disposing the construction waste complying with the existing rules and regulations. CSML will provide the necessary helps with in the powers of SPV.

#### **7.7. RESTORATION OF AREAS DISTURBED BY CONSTRUCTION.**

Unless otherwise directed by the Engineer, any areas disturbed by the construction activity, either inside or outside the Project Right of Way, shall be reinstated as follows:

All areas affected by the construction work shall be reinstated to their original condition, with new materials, including but not necessarily limited to, sidewalks, parking lots, Other roads, adjacent roads properties, nearby compound walls and land

#### **7.8. TIME SCHEDULE & MONITORING OF PROGRESS**

The Contractor shall submit to the Engineer two copies of a Monthly Progress Report (MPR) and weekly progress report (WPR), describing financial progress and physical progress of the project. The MPR&WPR shall address the matters set out in the Works Program like type of work, quantity and location.

The MPR/WPR shall be submitted by the end of each weak/calendar month as the case may be. It shall account for all works actually performed from twenty sixth day of the last month and up to twenty fifth day of the current month.

A monthly / biweekly meeting to monitor the progress of the project shall be convened by the Engineer, Contractor's site agent and site agent of all interfacing contractors shall attend the meeting. The Employer may also be present in the meeting.

#### **7.9. Statutory approval from Different Government Organizations.**

It will be responsibility of the contractor to obtain various approvals from different government organizations for starting the works. CSML will support with necessary letters and orders as per the request of contractor for obtaining the same. The statutory approvals from various departments like (KSEB, PWD, KMC, GCDA, GIDA, BSNL, KWA etc) should be obtained prior to starting the works.

#### **7.10. Payments**

The Contractor shall raise Bills once in a month for a minimum payment of 5 crores Rupees. The bills shall be submitted in printed format and excel with all supporting documents such as level field books, quantity calculations. Payments towards all interim Bills will be made by the Employer within 15 days from date of

submission 75% of value of the Bill value as adhoc, provided the bill should be correct in all respect supported by the supporting documents and the remaining will be paid by the Employer within 45 days of the submission of the bill in correct form. However, the Contractor shall have no claims for delay if any in effecting payment. Period of final measurement shall be three months from the date of completion of the project.

#### **7.11. Additional conditions of contract**

- 1) All construction material should be stored at contractors own arrangements, contractor may construct temporary sheds in areas earmarked by the Employer. If any material stored in un-authorized location the same shall got removed at the cost of the Contractor.
- 2) Preparation of concrete, mortars in the roads, pavements, under the building bare floors is strictly prohibited.
- 3) Drinking water requirement of the labour should be arranged by the Contractor
- 4) While transporting the materials along the road, spillage of material should be avoided. If any spillage occurs the same should be got cleaned immediately.
- 5) Royalty or charges due for use of private quarries and private land shall be paid by the Contractor.
- 6) No Labour camps shall be permitted inside the Site.
- 7) If night work is required to be carried out to fulfill the agreed rate of progress all arrangement shall be made by the Contractor inclusive of lighting at his cost
- 8) The works shall be carried out as per specifications and as per best Engineering practice.
- 9) No variations from, additions to and omissions in the items of work shall vitiate the Contract. All such variations, additions, substitutions etc., shall be decided as per the terms of the Contract Agreement.
- 10) Child Labour is strictly prohibited.

### **8. EMPLOYER'S REQUIREMENTS – CONSTRUCTION**

#### **8.1. CONTRACTOR'S SUPERINTENDENCE**

The Contractor shall submit a Staff Organisation Plan in accordance with the GCC. This plan shall be updated and resubmitted whenever there are changes to the staff. The plan shall show the management structure and state clearly the duties, responsibilities and authority of each staff member.

The site agent and his associates/supervisors shall have experience and qualification appropriate to the type and magnitude of the Works. Full details shall be submitted of the qualifications and experience of all proposed staff to the Engineer for his approval.

#### **8.2. CHECKING OF THE CONTRACTOR'S TEMPORARY WORKS DESIGN**

The Contractor shall, prior to commencing the construction of the Temporary Works, submit a certificate to the Engineer signed by him certifying that the Temporary Works have been properly and safely designed and checked and that the Contractor has checked the effect of the Temporary Works on the Permanent Works and has found this to be satisfactory.

#### **8.3. THE SITE**

Works Areas are those areas identified in list of roads given in scope of works.

#### **8.4. USE OF THE SITE**

The Site or Contractor's Equipment shall not be used by the Contractor for any purpose other than for carrying out the Works in the scope of this contract, except that, with the consent in writing of the Engineer, the Site or Contractor's Equipment such as batching and mixing plants for concrete and bituminous materials may be used for the work in connection with other contracts under the Employer.

Rock crushing plant shall not be used on the Site.

The location and size of each stockpile of materials, including excavated materials, within the Site shall be as permitted by the Engineer. Stockpiles shall be maintained at all times in a stable condition.

Entry to and exit from the Site shall be controlled and shall be only available at the locations for which the Engineer has given his consent.

#### **8.5. ACCESS TO THE SITE**

The Contractor shall make its own arrangements, subject to the consent of the Engineer, for any further access required to the Site.

In addition, the Contractor shall ensure that access to every portion of the Site is continually available to the Employer and Engineer.

#### **8.6. ACCESS TO OUTSIDE THE SITE**

The Contractor shall be responsible for ensuring that any access or egress through the Site boundaries are controlled such that no disturbance to residents or damage to public or private property occur as a result of the use of such access or egress by its employees and sub-contractors.

#### **8.7. SURVEY OF THE SITE**

A survey shall be carried out of the Site to establish its precise boundaries and the existing ground levels within it. Survey sufficient to provide a full record of the state of the Site before commencing the work with particular attention paid to those areas where reinstatement will be carried out later on. The survey shall be carried out before the site clearance wherever possible and in any case prior to the commencement of work in any Works Area. The survey shall be carried out by the Contractor and agreed with the Engineer.

#### **8.8. BARRICADES AND SIGNBOARDS**

The Contractor shall erect barricades as per site requirements to cover the work sit completely from public with gates. It should be sufficient to prevent entry by unauthorised persons to his Works Areas and necessary identity cards /permits should be issued to workers and staff by the contractor. The Contractor shall submit proposal for barricades of the complete perimeter of all works areas to the Engineer. Painting of the barricades shall be carried out to the design and colours as directed by the Engineer and the Contractor shall carry out re-painting of the entire barricades on an annual basis. No work shall be commenced in any Works Area until the Engineer has been satisfied that the barricades installed by the Contractor are sufficient to prevent, within reason, unauthorised entry. The cost of this entire barricade is included in quoted price.

Project signboards shall be erected not more than four (4) weeks, or such other period as the Engineer has given his consent, after the date of commencement of the Works. The types, sizes and locations of project signboards shall be agreed with the Engineer before manufacture and erection. Other advertising signs shall not be erected on the Site.

The consent of the Engineer shall be obtained before hoardings, fences, gates or signs are removed. Hoardings, fences, gates and signs which are to be left in positions after the completion of the Works shall be repaired and repainted as instructed by the Engineer.

Hoardings, barricades, gates and signs shall be maintained in clean and good order by the Contractor until the completion of the Works, whether such hoardings, fences, gates and signs have been installed by the Contractor or by others and transferred to the Contractor during the period of the Works. All the fencing, hoardings, gates and signs etc. shall be mopped minimum one in a **week** and washed **monthly**.

All hoardings, barricades, gates and signs installed by the Contractor shall be removed by the Contractor upon the completion of the Works, unless otherwise directed by the Engineer.

Hoarding/ barricades can be reused after removing from one place to other locations / sites provided they are in good condition and approved by Engineer.

Damage/worn-out barricades /hoarding shall be replaced by contractor within 24 hours. Engineer 's decision regarding need for replacement shall be final and binding and if no action is taken by contractor, **the Engineer may get it repaired through other agency and** the cost of any repairs will be deducted by the Engineer from any payment due to the Contractor.

#### **8.9. CLEARANCE OF THE SITE**

All Temporary Works which are not to remain on the Site after the completion of the Works shall be removed prior to completion of the Works or at other times instructed by the Engineer. The Site shall be cleared and reinstated to the lines and levels and to the same condition as existed before the Works started except as otherwise stated in the Contract.

#### **8.10. SURVEY**

The Contractor shall relate the construction of the Works to the Site Grid. To facilitate this, survey reference points have been established and the Engineer will provide benchmarks in the vicinity of the Site.

Before the Contractor commences the setting out of the Works, the Engineer will provide a drawing showing the position of each survey reference point and bench mark, together with the co-ordinates and/or level assigned to each point. The Contractor shall satisfy itself that there are no conflicts between the data given and shall establish and provide all subsidiary setting out points, monuments, towers and the like which may be necessary for the proper and accurate setting out and checking of the Works.

The Contractor shall carefully protect all the survey reference points, bench marks, setting out points, monuments, towers and the like from any damages and shall maintain them and promptly repair or replace any points damaged from any causes whatsoever. The Contractor shall regularly recheck the position of all setting out points, bench marks and the like to the satisfaction of the Engineer.

Upon handover to the Contractor, the survey reference points will become the responsibility of the Contractor. The Contractor shall, by annual or more frequent review, ensure that these survey points continue to remain consistent with the bench marks.

#### **8.11. SAFETY, HEALTH AND ENVIRONMENTAL REQUIREMENTS**

The Contractor shall comply with in the conditions stipulated in the Conditions of contracts on Safety, Health & Environment (SHE).

#### **8.12. Training of Contractor's Employees/Staff/Workers:-**

Contractor shall provide a training/classes on safety, Health & Environment (SHE) to all its workers/staff/employees/subcontractors of at least 2 weeks (96hrs.) at the time of induction .Before postings of any his workers/staff/employees/subcontractors, the contractor shall give a certificate that the said person had undergone the requisite SHE training. Non-compliance of the above will invoke penalties as per condition of contract of Tender Document.

In case of any mishap/ accident causing death/injury to public or damage to public/private property or damage to public/private vehicles or damage to railway property, the employer, will impose a penalty to the contractor as deemed fit and appropriate in addition to the cost of damage caused due to the mishap/accident.

#### **8.13. Use of "Tractor Transmission type" Pick and Carry Hydra crane:-**

Contractor shall mobilize "Truck Transmission type" pick and carry hydra crane – 2nd Generation model only.

#### **8.14. OTHER SAFETY MEASURES**

##### **Site Safety, Health & Environment Plan**

The Contractor shall, within 30 days of the date of Notice to Proceed, prepare and submit to the Engineer for review his proposed safety, Health and Environment plan which shall contain as a minimum those items set out in Conditions of Contract on Safety, Health & Environment Plan.

##### **Fire Regulations and Safety**

The Contractor shall provide and maintain all necessary temporary fire protection and firefighting facilities on the Site during the construction of the Works, and shall comply with all requirements of the Kerala Fire Services Department. These facilities may include, without limitation, sprinkler systems and fire hose reels in temporary site buildings, raw water storage tanks and portable fire extinguishers suitable for the conditions on the Site and potential hazards.

The Contractor shall submit details of these facilities to the Engineer for review prior to commencement of work on the Site.

If, in the Engineer's opinion, the use of naked lights may cause a fire hazard, the Contractor shall take such additional precautions and provide such additional firefighting equipment (including breathing apparatus) as the Engineer considers necessary. The term "naked light" shall be deemed to include electric arcs and oxyacetylene or other flames used in welding or cutting metals.

Oxyacetylene burning equipment will not be permitted in any confined space. Burning equipment of the oxypropane type shall be used.

#### **8.15. Hazard and Risk Assessments**

The Contractor shall, prior to the commencement of any operation carry out a detailed hazard and risk assessment. The results of such assessments shall be recorded and the records kept for inspection by the Engineer.

The Contractor shall produce detailed method statements for all medium and high risk operations and shall submit them to the Engineer for his consent prior to commencement of any task to which they relate.

The Contractor shall produce and implement a Permit to Work system for all high risk operations. The Permit to Work system shall be submitted to the Engineer for consent before application.

#### **8.16. Explosives**

Explosives shall not be used without prior written consent of the Engineer. Before consent to blasting is granted, the Contractor shall prepare a Specification as to the size of charge, the method of firing and any other restrictions that may be imposed from time to time.

Where the Engineer has consented to the use of explosives, the Contractor shall be responsible for obtaining the requisite licences and permits for complying with all statutory requirements for blasting.

The storage, transportation and use of explosives shall at all times be governed by the Explosives Acts and such other statutory regulations which may be applicable and as imposed by the Statutory Authorities.

#### **8.17. Standby Equipment**

The Contractor shall provide adequate stand-by equipment to ensure the safety of personnel, the Works and the public. These measures shall include as a minimum the following:-

- (a) stand-by pumping and generating equipment for the control of water;
- (b) stand-by equipment and spares for illumination of the Works; and
- (c) Stand-by generating equipment and equipment for the lighting for the works.

#### **8.18. Co-operation**

The Contractor shall provide full co-operation and assistance in all safety surveillance carried out by the Engineer or the Employer. Any breaches of the Site Safety Plan or the statutory regulations or others disregard for the safety of any persons may be the reason for the Engineer to exercise his authority to require the site agent's removal from the Site.

#### **8.19. CARE OF THE WORKS**

Unless otherwise permitted by the Engineer all work shall be carried out in dry conditions.

The Works, including materials for use in the Works, shall be protected from damage due to water. Water on the Site and water entering the Site shall be promptly removed by temporary drainage or pumping systems or by other methods capable of keeping the Works free of water. Silt and debris shall be removed by traps before the water is discharged and shall be disposed of at a location or locations to which the Engineer has given his consent.

The discharge points of the temporary systems shall be as per the consent of the Engineer. The Contractor shall make all arrangements with and obtain the necessary approval from the relevant authorities for discharging water to drains, watercourses etc. The relevant work shall not be commenced until the approved arrangements for disposal of the water have been implemented.

The methods used for keeping the Works free of water shall be such that settlement of, or damage to, new and existing structures do not occur.

Measures shall be taken to prevent flotation of new and existing structures.

#### **8.20. PROTECTION OF THE WORKS FROM WEATHER**

Work shall not be carried out in weather conditions that may adversely affect the Works unless proper protection is provided to the satisfaction of the Engineer.

Permanent Works, including materials for such Works, shall be protected from exposures of weather conditions that may adversely affect such Permanent Works or materials.

During construction of the Works storm restraint systems shall be provided where appropriate. These systems shall ensure the security of the partially completed and ongoing stages of construction and in all weather conditions. Such storm restraint systems shall be installed as soon as practicable and shall be compatible with the right of way, or other access around or through- out the Site.

The Contractor shall at all-time programme and order progress of the work and make all protective arrangements such that the Works can be made safe in the event of storms.

### **8.21. PROTECTION OF THE WORK**

The finished works shall be protected from any damage that could arise from any activities on the adjacent site/ works.

### **8.22. DAMAGE AND INTERFERENCE**

Work shall be carried out in such a manner that there is no damage to or interference with:

(a) watercourses or drainage systems; (b) utilities; (c) structures (including foundations), roads, including street furniture, or other properties; (d) public or private vehicular or pedestrian access; I monuments trees, graves or burial grounds other than to the extent that is necessary for them to be removed or diverted to permit the execution of the Works. Heritage structures shall not be damaged or disfigured on any account. The Contractor shall inform the Engineer as soon as practicable of any items which are not stated in the Contract to be removed or diverted but which the Contractor considers need to be removed or diverted to enable the Works to be carried out. Such items shall not be removed or diverted until the consent of the Engineer to such removal or diversion has been obtained.

(2) Items which are damaged or interfered with as a result of the Works and items which are removed to enable work to be carried out shall be reinstated to the satisfaction of the Engineer and to at least the same condition as existed before the work started. Any claims by Utility Agencies due to damage of utilities by the Contractor shall be borne by the Contractor.

### **8.23. UTILITIES**

Please refer Employer's Requirement – Functional

### **8.24. STRUCTURES, ROADS AND OTHER PROPERTIES**

The Contractor shall immediately inform the Engineer of any damage to structures, roads or other properties.

### **8.25. TREES**

The felling of trees in the Kerala is governed by the Social Forestry Act. The Contractor is not permitted to cut any trees without the permission of the Employer. The Contractor should assess the number of trees existing within the right-of-way and will arrange permission from Forest Department cutting back or removal of trees which are deemed to be affected by the right of way (i.e. within the limits of permanent works) construction works. The trees requiring to be felled will be removed from ground level up by the Contractor prior to commencement of the works. The Contractor will not be permitted to cut or remove any further trees. If for the purposes of the works additional trees are required to be cut/trimmed or removed, the Contractor must notify the Engineer of further tree felling requirements. Subject to compliance with the aforementioned act, arrangements for permission from Forest Department for tree felling may be made by the Contractor. The payment of tree cutting, removal, transportation required in this item shall be paid as per relevant head of BOQ.

### **8.26. REMOVAL OF GRAVES AND OTHER OBSTRUCTIONS**

If any graves and other obstructions are required to be removed in order to execute the Works and such removal has not already been arranged for, the Contractor shall draw the Engineer's attention to them in good time to allow all necessary arrangements and authorisations for such removal, and it shall not itself remove them unless the Engineer has given consent.

### **8.27. PROTECTION OF THE ADJACENT STRUCTURES AND WORKS**

The Contractor shall take all necessary precautions to protect the structures or works being carried out by others adjacent to and, for the time being, within the Site from the effects of vibrations, undermining and any other earth movements or the diversion of water flow arising from its work.

### **8.28. TRAFFIC MANAGEMENT PLAN**

The Contractor shall develop a detailed Traffic Management Plan for the work under the contract. The purpose is to develop a Traffic Management Plan to cope with the traffic disruption as a result of construction activities by identifying strategies for traffic management on the roads and neighbourhoods impacted by the construction activities. The Contractor shall implement the Traffic Management Plan throughout the whole period of the Contract. Traffic management plan should be based on IRC SP 055.

#### **Principles for Traffic Management**

The basis for the Plan shall take into consideration four principles:

- to minimise the inconvenience of road users and the interruption to surface traffic through the area impacted by the construction activities;
- to ensure the safety of road users in the impacted area;
- to facilitate access to the construction site, and to maintain reasonable construction progress.
- to ensure traffic safety at each construction site.

#### **Integrated Traffic Management Plan**

The Contractor shall prepare an integrated plan showing the arrangements to be made for accommodating road and pedestrian traffic, at individual construction sites and continuously along the alignment, to smooth traffic operations and for the safety of both construction workers and road users. The Plan shall consider different measures such as:

- Proper phasing and timing of traffic signals;
- Modifications to intersection geometry;
- Changes in lane usage;
- Parking prohibitions;
- Re-location of bus stops;
- Reducing width of footpaths and median;
- Right-turn prohibition;
- Work site access management;
- Minimising the duration of any road closure;
- Reversible lane operations;
- Modification of roadway alignment affected by the construction, which shall be in conformance with the requirements and regulations defined by the relevant authorities; and may include widening of roads, Construction of temporarily new road etc.



- Other traffic engineering measures as may be applicable.

#### **Mitigation of Traffic Disturbances**

The Contractor shall manage the vehicular and pedestrian right of way during the period of construction. The Contractor shall take account of the need to maintain essential traffic requirements, as these may influence the construction process.

The Contractor shall include local traffic diversion routes and assess traffic impacts caused by the construction in the affected areas. Signage layout shall be included to ensure that adequate motorist information will be provided for traffic diversions.

Where it becomes necessary to close a road or intersection, or supplementary lanes are required to satisfy the traffic demands, traffic diversion schemes to adjacent roadways shall be developed with quantitative justifications. The Contractor shall co-ordinate with all relevant authorities.

Other considerations include:

- The minimum lane widths for fast traffic and mixed traffic shall follow the regulations of the different authorities.
- Any roads or intersections that have no alternative access shall not be fully closed for construction.
- Emergency access to all properties shall be maintained at all times.
- Access to business premises and property shall be maintained to the extent that normal activities are not seriously disrupted.
- Where existing footbridges and underpasses are demolished or closed, provisions shall be made for pedestrian crossing to minimise the conflicts between a traffic lanes.
- Construction traffic shall be separated from other traffic wherever possible;
- Any traffic related facilities (bus stops, parking, etc.) which are affected by the construction works shall be maintained or relocated to appropriate locations;
- Motorists, pedestrians, workmen, plant and equipment shall be protected from accident at all times;
- Roadway designs, traffic management schemes, and installation of traffic control devices shall be in conformance with the requirements and regulations defined by the relevant authorities; and
- Where applicable, utility diversions shall be incorporated in the traffic management plan.

#### **8.31 APPROVAL FOR TEMPORARY TRAFFIC ARRANGEMENTS AND CONTROL**

The Contractor shall make all arrangements with and obtain the necessary approval from the transport authorities and the Police Department for temporary traffic arrangements and control on public roads. In the event that the Contractor, having used its best endeavours, fails to secure the necessary approval from the transport authorities and the Traffic Police Department for temporary traffic arrangements and control on public roads, then the Employer will use its best endeavours to assist the Contractor to secure such approval but without responsibility on the part of the Employer to do so.

### **8.32 TEMPORARY TRAFFIC ARRANGEMENTS AND CONTROL**

Temporary traffic diversions and pedestrian routes shall be surfaced and shall be provided where work on roads or footpaths obstruct the existing vehicular or pedestrian access. The relevant work shall not be commenced until the approved temporary traffic arrangements and control have been implemented.

Temporary traffic arrangements and control for work on public roads and footpaths shall comply with the requirements of the Traffic Police. Copies of documents containing such requirements shall be kept on the Site at all times.

Temporary traffic signs, including road marking, posts, backing plates and faces, shall comply with the requirements of the Traffic Police and should be in accordance with the requirements of Ministry of Surface Transport. All overhead traffic management signs that are fixed to bridges and gantries shall be illuminated at night. Pedestrian routes shall be illuminated at night to a lighting level of not less than 50 lux.

Adequate number of traffic marshals shall be deployed for smooth regulation of traffic.

Temporary traffic arrangements and control shall be inspected and maintained regularly, both by day and night. Lights and signs shall be kept clean and legible. Equipment which are damaged, dirty, incorrectly positioned or not in working order shall be repaired or replaced promptly.

### **8.33 PARTICULARS OF TEMPORARY TRAFFIC ARRANGEMENTS AND CONTROL**

The following particulars of the proposed temporary traffic arrangements and control on public roads shall be submitted to the Engineer for consent at least 28 days before the traffic arrangements and control are implemented:

- (a) Details of traffic diversions and pedestrian routes;
- (b) Details of lighting, signage, guarding and traffic control arrangements and equipment;

I Any conditions or restrictions imposed by Traffic Police or any other relevant authorities, including copies of applications, correspondence and approval.

Where concrete barriers are used to separate flows of traffic, the barriers shall be in a continuous unbroken line. No gaps shall be left between any sections of the barrier.

Site perimeter fencing and barriers along the roadway, shall have flashing amber lights positioned on the top of them every 50 metres apart and at every abrupt change in location. Directly below the flashing light shall be fixed, in the vertical position, a white fluorescent light with a waterproof cover.

### **8.34 USE OF ROADS AND FOOTPATHS**

Public roads and footpaths on the Site in which the work is not being carried out shall be maintained in a clean and passable condition.

Measures shall be taken to prevent the excavated materials, silt or debris from entering gullies on roads and footpaths; entry of water to the gullies shall not be obstructed.

Surfaced roads on the Site and leading to the Site shall not be used by tracked vehicles unless protection against damage is provided.

Contractor's Equipment and other vehicles leaving the Site shall be loaded in such a manner that the excavated material, mud or debris will not be deposited on roads. All such loads shall be covered or protected

to prevent dust being emitted. The wheels of all vehicles shall be washed when necessary before leaving the Site to avoid the deposition of mud and debris on the roads.

### **8.35 REINSTATEMENT OF PUBLIC ROADS AND FOOTPATHS**

Temporary diversions, pedestrian access and lighting, signing, guarding and traffic control equipment shall be removed immediately when they are no longer required. Roads, footpaths and other items affected by temporary traffic arrangements and control shall be reinstated to the same condition as existed before the work started or as permitted by the Engineer immediately after the relevant work is complete or at other times permitted by the Engineer.

The Contractor shall submit his design for the reinstatement to the relevant authorities and obtain their prior approval to carrying out the work. Reinstatement works shall include:

- Parking bays
- Footpath and kerbs
- Road Signage
- Street Lighting
- Landscaping
- Traffic Lights and Control Cable
- Road painting

### **8.36 SITE ESTABLISHMENT**

#### **8.33.1. SITE LABORATORIES**

The Contractor shall provide, erect and maintain in a clean, stable and secure condition a laboratory, equipped for the routine testing of concrete, soil and rock samples and for the storage and curing of concrete cubes or cylinders. And all the other tests mentioned in technical specification. This laboratory shall be located at the Contractor's principal work site or at a location agreed to by the Engineer.

#### **8.33.2. CONTRACTOR'S SITE ACCOMMODATION**

The Contractor shall provide and maintain its own site office at locations consented to by the Engineer. Offices, sheds, stores, mess rooms, garages, latrines, site office for employer and consultant each having minimum area 200 Sqft neatly furnished with furnitures and air conditioning on the Site shall be maintained in a clean, stable and secure condition. Accommodation for labours shall not be provided on the Site, The contractor should make own arrangements for labour accomadation which match with labour department norms.

#### **8.33.3. LATRINES AND WASHPLACES**

The Contractor shall provide latrines and wash places for the use of its personnel and all persons who will be on the Site. The size and disposition of latrines and wash places shall accord with the numbers and dispositions of persons entitled to be on the Site, which may necessitate their location on structures and, where necessary there shall be separate facilities for males and females. The capacities and layout shall be subject to approval of the Engineer. The Contractor shall arrange regular disposal of effluent and sludge in a manner that shall be in accordance with local laws/ regulations.

The Contractor shall be responsible for maintaining all latrines and wash places on the Site in a clean and sanitary condition and for ensuring that they do not pose a nuisance or a health threat. The Contractor shall also take such steps and make such provisions as may be necessary or directed by the Engineer to ensure that vermin, mosquito breeding etc. are at all times controlled.

#### **8.33.4. SITE UTILITIES AND ACCESS**

The Contractor shall be responsible for providing water, electricity, telephone, sewerage and drainage facilities for contractors site offices, structures and buildings and for all site laboratories as per technical specification and Employer's Requirements and all such services that are necessary for satisfactory performance of the Works. The Contractor shall make all arrangements with and obtain the necessary approval from the relevant civil and utility authorities for the facilities.

The contractor shall be responsible for provision of power supply for his works including for launching girder and the like. The Employer cannot guaranty provision of adequate, continuous power supply however assistance will be given in obtaining the necessary permissions for site generators and the like.

Other roads and parking areas shall be provided within the Site as required and shall be maintained in a clean, acceptable and stable condition. For lengths of roadway longer than 100 m and where vehicle movements exceed one hundred (100) movements/day and heavy commercial vehicle are to ply the Contractor shall provide paved surfacing of adequate thickness and quality to the satisfaction the Engineer.

#### **8.34. ASSISTANCE TO ENGINEER –**

Any operation of the Works that interferes with the checking of lines and levels shall be suspended at the request of the Engineer until the checking is complete.

#### **8.35. SUBMISSION OF PARTICULARS**

The following particulars shall be submitted to the Engineer for his consent not more than fifty six (56) days after the date of commencement of the Works:

- a) Drawings showing the formation works and the layout within earmarked area for the Contractor's offices, project signboards, principal access and other major facilities required early in the Contract, together with all service utilities;
- b) Drawings showing the details to be included on the project signboards and diversion boards. Drawings showing location of stores, storage areas, concrete batching plants and other major facilities and their Other roads/paths shall be submitted to the Engineer for his consent as early as possible but in any case, not less than twenty eight (28) days prior to when such facilities are intended to be constructed on the Site.

#### **8.36. SECURITY**

The Contractor shall be responsible for the security of the Site for the full time the Site is in its possession. It shall set up and operate a system whereby only those persons entitled to be on the Site can enter the Site. To this end, the Contractor shall with the consent of Engineer provide the specific points only at which entry through the security fence can be effected, and shall provide gates and barriers at such points of entry and whereby maintain a twenty four (24) hours security guard, and such other security personnel and patrols elsewhere as may be necessary to maintain security.

The Contractor shall maintain all site boundary fences in first class condition, and shall so arrange site boundary fences at all access drainage points of work areas that it's use of such access points etc., are not

restricted by the system or method of achieving the required security measures. Notices shall be displayed at intervals around the Site to warn the public of the dangers of entering the Site.

During the progress of the Works the Contractor shall maintain such additional security patrols over the areas of the Works as may be necessary to protect its own and its sub-contractor's work and equipment and shall co-ordinate and plan the security of both the work under this Contract and the work of others having access to and across the Site and the Works.

In order to operate such a security system it will be necessary to institute the issue of unique passes to personnel and vehicles entitled to be on the Site, and which may need to be separately identifiable according to the shifts being worked on Site. The Contractor shall at the outset determine, together with the Engineer, a system and the design of passes to suit the requirements of the foregoing and to suit the methods of work to be adopted by the Contractor. The Contractor shall at all times ensure that the Engineer has an up to date list of all persons entitled to be on the Site at any time. The contractor shall also introduce a system of issue passes to any outsider or person/vehicles belonging to agencies other than employer/ Engineers who may have to visit the site in connection with work

The Contractor shall liaise with the Designated Contractors and the contractors responsible for the adjacent and other interfacing contracts and ensure that co-ordinated security procedures are operated, in particular in respect of vehicles permitted to pass through the Site and/or the adjacent sites in the latter periods of the Contract.

Security and checking arrangements as felt necessary shall be provided with advice and help of Police.

#### **CONSTRUCTION OF SMART ROADS & OTHER ROADS**

Cochin Smart Mission Limited

#### **List of Technical Personnel for the Key Positions<sup>1</sup> (to be referred for civil works)**

S. No	Key Positions	Qualifications	Age	Similar Work Experience	Total Work Experience
1.	Project Manager -1 No.	B.E. Civil or Equivalent	below 65 years	5 Years	12 Years
2.	Construction Manger - 1 No.	B.E. Civil or Equivalent	below 55 years	5 years	10 years
3.	Planning Engineer - 1 No	B.E. Civil or Equivalent	below 50 years	5 years	10 years
4.	Quality Control & Material Engineer- - 1 No	B.E. Civil <i>with experience in QA/QC</i>	below 55 years	5 years	10 years
5.	Plant Engineer - 1 No	B.E. Mech/ Diploma in Mech	below 55 years	5 years	10 years (12 years for Diploma holders)
6.	Survey Engineer - 1No.	Diploma in Civil	Below 55 years	3 years	10 years

7.	Quantity Surveyor – 1 No.	B.E. Civil / Diploma Civil	below 55 years	3 years	8 years
8.	Site Engineer – 5 Nos	B.E. Civil / Diploma Civil	below 50 years	3 years	6 years (8 years for Diploma holders)
9.	Horticulturist – 1 No.		below 50 years	3 years	5 years

Note:

1. Aforesaid personnel shall be deployed within the period starting from the date of award of contract as stipulated in the contract.
2. Approval of the Engineer in charge about suitability of personnel shall be obtained before deployment.

**CONSTRUCTION OF SMART ROADS**

**List of Key Equipment's/ Machines for Construction Work (Only for civil works)**

*(See clause 14 of Section 2-ITB)*

Sl. No.	List of Equipment	Numbers	Capacity
	<b>During Execution</b>		
1	HOT MIX PLANT- BATCH TYPE ELECTRONIC CONTROLS AND VIBRATORY SCREENS	1	60 TPH
2	WMM PLANT	1	100 TPH
3	EXCAVATORS AND DOZESS	2	1.25 CUM
4	MOTOR GRADER	1	200 CUM/HR.
5	PAVER FINISHER WITH ELECTRONIC SENSORS	1	1 NOS. CAPABLE OF PAVING 5.5MTR./HR.
6	CONCRETE BATCHING PLANT	1	15 CUM/HR.
7	PNEUMATIC TYRE ROLLERS	1	8 TONNE MINIMUM 8 TYRES

8	VIBRATORY ROLLER	2	8 TO 10 TONNE
9	TANDOM VIBRATORY ROLLER	2	8 TO 10 TONNE
10	TRUCKS	10	10 TONNE
11	HYDRA CRANE	1	
12	MINI VIBRATORY ROLLER	1	
13	TRUCK MOUNTED TRANSIT MIXER	4	4-6 CUM
14	BITUMEN PRESSURE DISTRIBUTOR	2	1750 SQM/HR.
15	WATER TANKER	2	6 KL
16	PAVER BLOCK CASTING MACHINE	1	
17	MECHANICAL BROOM	1	1500 SQMTR/HR.

**Annexure – K**

*(See clause 15 of Section 2 -ITB)*

**MATERIALS TO BE ISSUED BY THE DEPARTMENT**

**N/A**



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

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**TECHNICAL SPECIFICATIONS**

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**PART-1**

**CIVIL WORKS**



## SECTION V

### TECHNICAL SPECIFICATIONS

#### 1. PREAMBLE

1.1 The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in Volume-I. in addition to the specifications for Road and Bridge works (Fifth Revision) 2013.

#### 1.2 SITE INFORMATION

1.2.1 The information given hereunder and provided elsewhere in these documents is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

1.2.2 The area in which the works are located is mostly plain terrain, the approximate longitude and latitude of the region being 9.9312 N and 76.2673 E respectively.

#### 1.2.3 General Climatic Conditions

1.2.3.1 The variation in daily temperature in this region is as under:

- i) During summer months, from about 28°C minimum to 35°C maximum.
- ii) During winter months, from about 22°C minimum to 32°C maximum.

1.2.3.2 The average annual rainfall in the area is of the order of 3107 mm, a good portion of which is concentrated during the months of June to October each year.

1.2.3.3 The range of relative humidity varies from a minimum of 70% to a maximum of 90% (January to May).

#### 1.2.4 Seismic Zone

The works are located in Seismic Zone III as per IS: 1893-1975.

#### 1.2.5 Exposure Conditions at site

The exposure condition at site is considered to be environmentally saline atmosphere. Materials selection, protection of various components and other provisions are to be made with this in view.

## 2. GENERAL REQUIREMENTS

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

### 2.1 PART-I: General Technical Specifications

The General Technical Specifications shall be the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION), 2013, issued by the Ministry of Road Transport and Highways, and published by the Indian Roads Congress along with any other addendum/corrigendum issued up to 28 days before the final date of submission of the bid.

### 2.2 PART-II: Supplementary Technical Specifications

The Supplementary Technical Specifications shall comprise of various Amendments/Modifications/ Additions to the "General Technical Specifications" referred to in PART - I above and Additional Specifications for particular item of works not already covered in PART-I.

**2.2.1** A particular clause or a part thereof in "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION), 2013 referred in PART-I above, were Amended/ Modified/Added upon, and incorporated in PART-II, referred to above, such Amendment/Modification/Addition supersedes the relevant Clause or part of the Clause.

**2.2.2** The Additional Specifications shall comprise of specifications for particular item of works not already covered in PART-I.

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

**2.2.4** In so far as Amended/Modified/Added Clause may come in conflict or be inconsistent with any of the provisions of the said Specifications under reference, the Amended/Modified/ Added Clause shall always prevail.

#### 2.2.5

**2.2.5.1** The following Clauses in the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (fifth REVISION), 2013,) have been amended/modified/added upon. 102, 106,107,108, 109, 110, 111, 201, 202, 301, 305, 306, 406, 409, 501, 504,505, 507, 510, 602, 801, 803, 804, 901, 903, 1002, 1007, 1008,1009, 1010,1012, 1014, 1015, 1101, 1104, 1115, 1501, 1502, 1503, 1504, 1506, 1509, 1510, 1513, 1604, 1605, 1704, 1705, 1706, 1707, 1716, 2001, 2009, 2210, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2824, 2904, 2907,

**2.2.5.2** Quality Assurance Manual of National Highways Authority of India printed in 2006.

#### 2.2.6 Additional Specifications

The following Clauses have been added to the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION, 2013

1. Appendix-I (Guard posts)
2. Appendix-II (PVC rigid pipes)
3. Appendix-V (Special Technical Specifications for Remedial Works)
4. Appendix VI (Construction of Speed Breakers)

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

## AMENDED CLAUSES OF GENERAL TECHNICAL SPECIFICATIONS

### SECTION 100 GENERAL

#### Clause 102 DEFINITIONS

The following abbreviations shall be added in this Clause:

"MOST" Ministry of Surface Transport,

"MORT & H" Ministry of Road Transport & Highways.

"NHAI" National Highways Authority of India

"CSML" Cochin Smart Mission Limited.

"WBM" Water Bound Macadam

"WMM" Wet Mix Macadam

"CECRI" Central Electro Chemical Research Institute

"MDD" Maximum Dry Density (as per IS: 2720 – PART 8)

#### Clause 106 CONSTRUCTION EQUIPMENT

Add the following after the end of sub para (b)

All measuring devices and gauges shall be in good working condition. Measuring devices that can affect product quality shall be calibrated prior to use and at prescribed intervals against certified equipment. Calibration procedures shall be established, maintained and documented and corrective actions taken when results are unsatisfactory. Accuracy and fitness of measuring devices shall be ensured by proper maintenance.

#### Clause 107 CONTRACT DRAWINGS

**Clause 107.2** Add the following after the end of the para.

After careful study of the drawings issued by the Engineer, the Contractor shall, prepare, where necessary all supplementary and working drawings with necessary field/construction information and the like for adequacy of construction methods and procedure etc., and shall submit the same to the Engineer for approval prior to construction progressively according to the work programme consented by the Engineer. Engineer shall be given not less than 21 days for review of these supplementary/working drawings and as directed, the contractor shall modify the drawings incorporating the comments and requirements of the Engineer.

Detailed construction drawings for the culverts/minor bridges incorporating the details of the site/location shall be duly prepared & submitted by the successful bidder at least 1(one) week prior to the commencement culvert construction to the Engineer and got them approved by the Engineer.

#### Clause 109 SETTING OUT

**Clause 109.8** Add the following para in the Clause 109.8

Surveying Equipments and Personnel.

The contractor shall provide the necessary surveying equipment, accessories, and surveyors and labourers required for setting out and related measurements including making available these to the Engineer and his representatives at different stages of the work. The surveying equipment shall be of high standard of manufacture as approved by the Engineer, in good working condition with adequate numbers and shall include, inter alia, the following:

- i) Precision automatic level with micrometre attachment with tripods and levelling staff reading to 5mm accuracy by direct observation and to 1mm accuracy by estimation or better.
- ii) Total station with 2 spare batteries and a charger, three tripods plus tangents sufficient for a 4 km. Range, together with an electronic data recorder, 6 data packs and all necessary software for operation.
- iii) Precision staff
- iv) 3 metre straight edge and measuring wedge fitted with handles wedges 100mm ht. and 1mm accuracy.
- v) Field Umbrellas.
- vi) Ranging rods 50mm dia 3m long straight with one end each metallic conical and painted alternatively black and white along the length.
- vii) Camber Templates 3 lane fitted with handles.
- viii) Steel tape graduated in metres, centimetres and millimetre.
- ix) 10m long
- x) 20m long
- xi) 50m long
- xii) Reference markers and pegs

The contractor shall maintain the surveying equipment in good condition during the full duration of works and replace the ones which get worn out or otherwise become unworkable.

The surveying equipment and related resources shall be provided under the general obligations of the Contractor requiring no separate payment.

**Clause 110 Public Utilities**

Replace whole of this clause with the following:

Encumbrances in Construction Area, including Trees and Utilities

**Clause 110.1** The contractor shall be responsible to coordinate with service provider / concerned authorities for cutting of trees, shifting of utilities and removal of encroachments etc. and making the site unencumbered from the project construction area required for completion of work. This will include initial and frequent follow-up meetings / actions / discussions with each involved service provider / concerned authorities. The contractor will not be entitled for any additional compensation for delay in cutting of trees, shifting of utilities and removal of encroachments by the service provider / concerned authorities. Payment for cutting of trees and shifting of utilities as required by the concerned department shall be made by the Employer.

**Clause 110.2** Drawings scheduling the affected encumbrances such as trees and services like water pipes, sewers, oil pipelines, cables, gas ducts, electricity lines, accessories, telephone poles and OFC cables etc. included in the contract document shall be verified by the contractor for accuracy of scope.

**Clause 110.3** The Employer will make payments to the respective service provider / authorities for cutting of trees and shifting of utilities, wherever required. The contractor will obtain necessary approval from such Authorities after payments by the Employer and also in cases where payments are not required to be made for such shifting. The Employer will also write to all concerned departments / service provider organization for expediting and facilitating cutting of trees, shifting of utilities and removal of encroachment etc.

**Clause 110.4** Any services affected by the Works must be temporarily supported by the Contractor who must also take all measures reasonably required by the various bodies to protect their services and property during the progress of the Works. It shall be deemed to be part of the Contract and no extra payment shall be made for the same.

**Clause 110.5** The Contractor may be required to carry out certain works for and on behalf of the various bodies and he shall also provide, with the prior approval of the Engineer, such assistance to the various bodies as may be authorized by the Engineer.

**Clause 110.6 Payment** For co-coordinating the work of cutting of trees, shifting of utilities and removal of encroachments etc. are incidental to the works. No extra payment shall be made to the contractor on account of coordination.

#### **Clause 111 Precautions for Safeguarding the Environment**

##### **Clause 111.1 General**

Add the following as second paragraph:

The contractor shall take all precautions for safeguarding the environment during the course of the construction of works. He shall abide by all rules, regulations and laws in force governing pollution and environmental protection that are applicable to the area where the works are situated.

##### **NOISE:**

The Contractor shall mitigate against any sustained increase in base line ambient sound levels at sensitive receptors during construction of work.

All construction operations shall be performed in a manner to minimize noise and vibration. The parameters for noise are detailed below.

- 70 dB (A) for day and night;
- 50 dB (A) for day and 45 dB (A) for night for residential and silence zone areas.

If the noise level are found to be above these standards and it is determined by the Engineer that these levels are due to the equipment's or plants being deployed by the contractor, he shall undertake, at his own cost measures as approved by the Engineer, to bring these levels down to the specified levels. Contractor shall ensure:

- Stationery equipment will be placed at least 115m away from inhabitant areas & 200m from sensitive areas to minimum noise impacts.
- Construction activities generally prohibited between 10 p.m. to 6 a.m. near habitation.
- Provision of using ear plugs, helmets by workers exposing high noise levels.
- Erecting sign boards at sensitive and residential locations prohibiting use of air horns.

Labour shall be warned against the hunting of wild life, if any. No archaeological site shall be disturbed.

### **Clause 111.3 Quarry Operations**

This clause shall be substituted by the following:

The contractor shall obtain material from licensed quarries only after the consent of the forest department or other concerned authorities. The quarry operation shall be undertaken within the purview of the rules and regulations in force. Contractor shall ensure scheduling the movement of transport carrying material to and from site during non-peak hours. The trucks carrying dusty material shall be covered with tarpaulin and provided with adequate free board to prevent spillage. End boards shall be provided in loaders to prevent spillage. Stockpiling of material shall be properly planned so as to ensure that no traffic jam takes place on the highway. Contractor should have MOU with 2 quarry Employers to supply material without any hindrance.

**Clause 111.5** This clause shall be substituted by the following:

### **Pollution from Hot Mix Plant, Batching Plant & Other Construction Machinery**

The Contractor shall ensure the use of relatively new, well maintained hot mix plant (batching plant) so that emission conforms to the CPCB norms and be fitted with dust extraction unit avoid prolonged engine powered equipment idleness. The hot mix plant shall be founded on compacted/paved surface so that the spills do not affect the aquifer. Properly sizing and maintenance of mufflers, engine intake, silencers and engine enclosures shall be carried out. The contractor shall take every precaution to reduce the levels of noise, vibration, dust and emission from his plant. The contractor shall be fully responsible for any claims for damages caused to the Employer of property, fields and residence in the vicinity.

All vehicles, equipments and machinery need for construction will be regularly maintained to ensure that pollution emission levels conform to CPCB norms. All vehicles should be fitted with silencer and dust removal device.

Construction vehicles, machinery & equipment will move or be stationed in the designated area to avoid Compaction of soil ensuring the perseverance of the top soil for agriculture.

**Clause 111.14 Environmental Monitoring**

In order to carry out periodic checks environmental monitoring will be carried out by the Engineer as per schedule and if any parameter is found above the acceptable standards, mitigation measures/control measures as decided by the Engineer shall be compiled with by the contractor.

**Clause 111.15 Protection of Existing Trees**

The contractor shall take all necessary measures to ensure safety and protection of the remaining trees from any action whatsoever relating to his construction operations in the adjoining areas.

Adequate supply of fuel (Kerosene, LPG) shall be provided to the construction labourers to avoid felling of trees for cooking and other household activities.

**Clause 201 CLEARING AND GRUBBING**

**Clause 201.1 Scope**

Delete the last sentence and replace with as under:

"Clearing and grubbing shall be performed less than one month in advance of earthwork operations and in accordance with the requirements of these specifications. If any vegetation grows after clearing and grubbing and before earthwork, the Contractor shall repeat the work to the satisfaction of the Engineer without any extra cost". Areas requiring clearing and grubbing shall be determined by the Engineer.

**Clause 202 DISMANTLING CULVERTS, BRIDGES ANY OTHER STRUCTURES WITHIN THE RIGHT OF WAY.**

**Clause 202.3 Dismantling of Pavement**

Add at the end of 2nd para.

The existing bituminous pavement surface, sub-base courses (Wet Mix Macadam or Water Bound Macadam, stone soling, brick soling etc.) shall be removed by ribbing, pavement breaker or any other suitable equipment, or any other suitable means as approved by the Engineer.

"Dismantling of existing base and sub base courses shall be measured by taking cross-sections at 100m intervals before dismantling by making 30cm wide trench in full width and depth of pavements and computing the volumes in cum by the method of average cross-sectional areas".

**Clause 202.4 Back-filling**



After "operations" add "and wells encountered in the alignment". Add after last sentence "The wells may be capped thereafter if directed by the Engineer". The filling of wells and capping will be paid separately in the relevant item of earth work, concrete, RCC works as the case may be.

**Clause 202.6 Measurement for Payment**

Add the following items after item (vi):

(vii) Removal of Sign boards/Bill boards, Km stones and Guard posts-- No.

**SECTION 300 EARTHWORK, EROSION CONTROL AND DRAINAGE**

**Clause 301 EXCAVATION FOR ROADWAY AND DRAINS**

**Clause 301.1 Scope**

Insert the following between the words "roadway" and "side drains" in the second line:

"road shoulders, verge, medians".

**Clause 301.3.3 Excavation - General**

Add the following at end of last paragraph:

"Temporary support to the sides of the excavation, necessary to support the foundation of adjoining structures and to prevent any ground movement shall be provided by the Contractor. Where temporary supports are provided these shall be designed and removed such that no ground movement occurs on removal. The contractor shall submit his proposal in this respect to the Engineer for approval prior to commencement for the excavation.

**Clause 301.3.7** This Clause shall read as under:

"In works involving widening of existing pavements or providing paved shoulders and hard shoulders, the existing shoulders/verge/median shall be removed to its full width. The subgrade material within 0.5m from the lowest level of the pavement shall be checked for density which should not be less than 97% as per table 300-2. In case the density is found to be less than 97%, then the subgrade shall be loosened, watered and re-compacted as per Clause 305 to a density not less than 97% of maximum dry density determined according to IS:2720 (Part 8). Any unsuitable material encountered in this portion of subgrade shall be removed and replaced with suitable material and compacted in accordance with Clause 305."

While removing the existing shoulders/verge/median, care shall be taken to see that no portion of the existing pavement designated for retention is loosened or disturbed. If the existing pavement gets disturbed or loosened, it shall be dismantled and cut to a regular shape with sides vertical and the disturbed/loosened portion removed completely and re-laid as directed by the Engineer, at the cost of the Contractor.

**Clause 301.3.11 Use and Disposal of Excavated Materials**

Delete this sub-clause and replace with:

"All the excavated materials shall be the property of the Employer. Suitable material obtained from the excavation of the roadway, shoulders, verges, drains, cross drainage works, etc. shall be used for:

- i) Filling for roadway embankments.
- ii) Filling existing pits in the right of way as directed by the Engineer, including levelling and spreading, with all leads and lifts and
- iii) For landscaping of the road as directed by the Engineer, including levelling and spreading, with all leads and lifts.

Unsuitable and surplus material, which, in the opinion of the Engineer cannot be used in the works, shall be removed from site by the Contractor and disposed off with all leads and lifts in accordance with all statutory requirements as approved by the Engineer."

**Clause 301.9 Rates**

**Clause 301.9.2** This clause shall read as under:

"The contract unit rate for loosening , excavating , spreading and re-compacting at subgrade level shall include full compensation for loosening to the specified depth, removing the loosened soil outside the roadway excavation, rolling the surface below, breaking the clods, spreading the excavated soil in layers, watering where necessary and compacting to the requirements."

**Clause 305 EMBANKMENT CONSTRUCTION**

**Clause 305.2.1.4** Delete second sentence.

**Clause 305.2.1.6** Add after last sentence.

"Materials to be used as subgrade shall have a 4 day soaked CBR value of minimum 10% at the unit weight applicable as per Table 300-1.

**Clause 305.3 Construction Operations**

**Clause 305.3.4 Compacting Ground Supporting Embankment/Subgrade**

Para 1 of this clause shall read as under:-

Where necessary, the original ground shall be levelled, mixed with water and then compacted by rolling to facilitate placement of 1st layer embankment and it's Compaction in accordance with the requirement as given in table 300.2. Wherever unsuitable soil is removed this Clause is applicable and no separate payment shall be made for the same. Wherever embankment is to be constructed on layers of embankment completed by previous agency and got disturbed shall be rectified to bring such layers to satisfy the specification requirements and no separate payments shall be made for the same and shall be treated as incidental to the works.

Add the following sentence at the end of para 2.

"Where necessary to facilitate Compaction of the subgrade to 97% relative Compaction as stated above, a further depth of maximum of 0.20 meter thickness shall be loosened, watered and compacted in accordance with Clause 305.3.5 and 305.3.6 to not less than 95% of maximum dry density, determined in accordance with IS:2720 (Part 8)." In case 97 percent dry density is not obtained; the contractor shall carry out remedial measures as directed by engineer to achieve the required density.

**Clause 305.3.5 Spreading material in layers and bringing to appropriate moisture content.**

**Clause 305.3.5.1 Add the following at the end of this clause.**

To ensure the density of each layer the contractor shall prepare a layer chart indicating layer number, level, etc. in the format as approved by the Engineer.

**Clause 305.3.6 Compaction**

Insert the following sentence before the last sentence of paragraph 5.

"The co-relation between sand replacement densities and nuclear gauge densities shall be based on trials with minimum 30 coherent density measurements".

**Clause 305.9.1** Insert "including removal of top soil after word 'materials' appear in first line of item (v)."

**Clause 306 SOIL EROSION AND SEDIMENTATION CONTROL**

**Clause 306.4 Measurement for Payment**

Substitute Clause 306.4 as follows:

"All temporary sedimentation and pollution control works shall be deemed as incidental to the earthwork and other items of work and as such no separate payment shall be made for the same."

**Clause 306.5 Deleted**

**Clause 406 WET MIX MACADAM SUB-BASE/BASE COURSE**

**Clause 406.2.1.1 Physical Requirement**

Add at the end of 1st para.

"The fraction of material passing through 4.75m m sieve shall be crusher run screening only."

**Clause 406.3.5 Compaction**

Delete the sentence "If the thickness of single compacted layer does not exceed 100mm, a smooth wheel roller of 80 to 100 KN weight may be used.

**Clause 406.6** Add after "subgrade soil getting mixed with aggregates" or defective due to traffic over exposed layers in first sentence.

**Clause 409 CEMENT CONCRETE KERB AND KERB WITH CHANNEL**

**Clause 409.5.6** Add new sub-clause:

"After erection, kerbs shall be painted with one coat primer and two coats of colour paint (white and black). All colours shall be ready mix oil bound and shall be approved by the Engineer."

## **SECTION 500 BASE AND SURFACE COURSES (BITUMINOUS)**

### **Clause 501.3 Mixing**

The first sentence of para 1 shall read as under:

"Pre-mixed bituminous materials, including bituminous macadam, dense bituminous macadam, semi-dense bituminous concrete and bituminous concrete, shall be prepared in a hot mix plant of batch type of minimum capacity of 120 tonne per hour and capable of yielding a mix of proper and uniform quality with thoroughly coated aggregates."

**Clause 501.5.3 Add at the beginning of the 4th para:**

"The temperature of mix at the time of laying shall be in the range 120 - 145 degree Celsius."

### **Clause 501.6 Compaction**

Replace the eighth sentence of second para beginning "The intermediate rolling...5.6 kg/sq.cm" by "The intermediate rolling shall be done with a pneumatic tyred roller of 12-15 tonnes weight having nine wheels, with a tyre pressure of at least 5.6 kg/sq.cm".

Add at the end of 6th para:

"Rolling shall be continued till the density achieved satisfies the requirements of Clause 903.4.2 and all roller marks are eliminated".

## **Clause 504 BITUMINOUS MACADAM**

### **Clause 504.2 Materials**

#### **Clause 504.2.2 Coarse Aggregates**

- i) Delete the words from 2nd line of 1st para "crushed gravel or other hard material".

**Clause 504. 8** Add the words "except for the item of tack coat" after the words "required operations as specified" at the end of last sentence.

## **Clause 505 DENSE GRADED BITUMINOUS MACADAM**

### **Clause 505.2 Materials**

#### **Clause 505.2.2 Coarse Aggregates**

- i) Delete the words from 2nd line of 1st para "crushed gravel or other hard material retained on the 2.36 mm sieve".

**Clause 505.3.3** Insert the following paragraph between existing paragraph 3 and 4.

Mix design shall be carried out in accordance with the **Marshall method described in Asphalt Institute Manual MS-2.**

**Clause 505.9 Rate**

Add the words "except for the item of tack coat" after the words "required operations as specified" in second line.

**Clause 507 BITUMINOUS CONCRETE**

**Clause 507.2.5 Aggregate Gradation**

Add the note below Table 500-17:

"The grading of the aggregate mix as used in work shall be a smooth curve within the approximate parallel of the envelope in Table 500-17".

**Clause 510 OPEN-GRADED PREMIX SURFACING**

**Clause 510.1 Open graded Premix Surfacing using Viscosity Grade Paving Bitumen**

**Clause 510.1.2.2 Aggregates**

The first line of para 1 shall read as under:

"The coarse aggregates shall conform to clause 504.2.2 with the modification in the said clause as under:

- i) Delete the words from second line of first para of clause 504.2.2 "crushed gravel or other hard material retained on the 2.36 mm sieve

**Clause 600 CONCRETE PAVEMENT**

**Clause 602.2.3** To be added at the end of the Clause.

"Admixtures containing calcium chloride shall not be used".

**Clause 602.3.3.2** The Clause is modified as under:

The ratio between 7 and 28 day strengths shall be established for the mix to be used in the slab from results of the design mix trials. The average flexural strength of the 7 days cured specimens shall be divided by the average flexural strength of the 28 days cured specimens for each batch and the 'R' shall be determined to an accuracy of three decimal places.

If during the construction of the trial length or during normal working, the average value of any four consecutive 7 day test results divided by R falls below  $(4.0 + 1.65 \times \text{standard deviation})$  MPa, then the Contractor shall stop paving and propose for the approval of the Engineer corrections to the mix to improve the flexural strength. The Contractor shall provide evidence, that the proposed corrections result in the required flexural strength before

paving operations may be resumed and producing minimum six beams with the proposed corrected mix and testing these for 7 days flexural strength. No additional payment will be made for any changes to the mix.

**Clause 602.5** The clause is modified as under:

A separation membrane shall be used between the concrete slab (pavement) and dry lean concrete (DLC), as well as DLC and wet mix macadam. Separation membrane shall be impermeable plastic sheeting 125 micron thick laid flat without creases. It shall be white in colour and transparent. Before placing the separation membrane, the surface at which it is laid shall be swept clean of all the extraneous materials using air compressor. Wherever overlap of plastic sheets is necessary, the same shall be at least 300 mm and any damaged sheeting shall be replaced at the Contractor's expense. The separation membrane may be nailed to the lower layer with nails. There shall be no standing water on or under the separation membrane when concrete is placed upon it.

**Clause 602.6.2.1** Replace the first para as follows:

"Transverse joints shall be contraction and expansion joints. Contraction joints shall be provided at 4.5 m intervals, except where the expansion joints are provided. Expansion joints shall be provided at the junction of the approach slabs and bridges and the rigid pavement. Furthermore, transverse joints shall be provided at special locations like transitions to structures, transition to flexible pavements, off carriageway areas as shown on the drawing. The exact position of transverse joints shall be co-ordinate with adjoining construction packages and shall be proposed by the Contractor in writing for the approval of the Engineer. Transverse joints shall be straight within the following tolerances along the intended line, which is the straight line perpendicular to the longitudinal axis of the carriageway at the position of the joint".

**Clause 602.6.4.3** Joints at the junction of rigid and flexible pavements (new clause)

"Joints shall be provided at the junction of rigid and flexible pavement as shown in drawing".

**Clause 602.9.1** Add new paragraph at the end as follows:

"Paving shall be laid in full lane width".

**Clause 803 ROAD MARKINGS**

**Clause 803.3** Deleted.

**Clause 901 GENERAL**

**Clause 903 QUALITY CONTROL TESTS DURING CONSTRUCTION**

**Clause 903.4 Tests on Bituminous Constructions**

In Table 900-4, serial No.5 for Dense Bituminous Macadam/Bituminous Concrete add the following at the end in the frequency column:

"10% of the density tests shall be done 250mm (average) from the edges."

**Clause 1002 SOURCES OF MATERIAL**

This clause shall read as follows:

The Contractor shall identify the sources of materials like coarse aggregate and sand and notify the Engineer regarding the proposed sources prior to deliver.

Samples of materials from the sources shall be tested, in the presence of Engineer's representative, for conformity to specifications. It shall also be ensured that the variation in test results of different samples is within acceptable limits. If the product from the approved source proves unacceptable at any time, the Contractor shall provide new sources of acceptable material from other sources at his own expenses conforming to specifications.

For manufactured items like cement, steel reinforcement, prestressing stands, the contractor shall intimate the Engineer details of the course (plant where the material is manufactured), testing facilities available with the manufacturer and arrangements for transport and storage of material at site. It directed by the Engineer, the Contractor shall furnish samples and test results of recently manufactured material. The Engineer, at his direction, may require the contractor to test the materials in an independent laboratory approved by the Engineer, and furnish test certificates. The cost of these tests shall be borne by the contractor. The sampling and test procedures shall be as laid down in Indian Standards or where these are not available as per the directions of the Engineer. Only material from the sources approved by the Engineer shall be brought to the site. If the material from the approved sources proves unacceptable at any time, the contractor shall provide new sources of acceptable material conforming to specifications from other sources at his own expense.

For proprietary items like bearings, expansion joints refer clause 115.1.

**Clause 1007 COARSE AGGREGATES**

- ii) Delete from the first sentence "crushed gravel and natural gravel" of para 1.
- iii) Add at the end of para 2:

Cost of all tests shall be borne by the Contractor.

**Clause 1008 FINE AGGREGATES**

Delete the word 'crushed gravel' and 'gravel' in para 2.

**Clause 1010 WATER**

In para (c) the permissible limit for Chlorides (Cl) shall be read as "250 mg/lit for structures having length more than or equal to 30 m," instead of "500 mg/lit."

**Clause 1012 CONCRETE ADMIXTURES**

**Clause 1012.1** Add the following at the end of paragraph 2 of clause 1012.1

Admixtures shall not impair the durability of concrete; they shall not combine with the ingredients to form harmful compounds or endanger the protection of reinforcement against corrosion. Only chloride free admixtures shall be used.

**Clause 1014 STORAGE OF MATERIALS**

**Clause 1014.3 Aggregates**

The following shall be added to this Clause:

"Aggregates shall be stored or stockpiled in such a manner that segregation of fine and coarse sizes will be avoided and also that the various sizes will not become intermixed before proportioning. They shall be stored, stockpiled and handled in such a manner that will prevent contamination by foreign materials."

**Clause 1015 TESTS AND STANDARDS OF ACCEPTANCE**

Add following as paragraph 3:

Independent testing of prestressing steel shall be carried out by the contractor for each consignment from each source at site in the laboratory approved by the Engineer before use. The tests shall be carried out for the properties as listed in clause 7.2.1 of BS-5896:1980. These tests are in addition to the tests carried out by the manufacturer.

**SECTION 1100 PILE FOUNDATION**

**Clause 1101 DESCRIPTION**

**Clause 1101.2** Add the following at the end of clause 1101.2

The contractor shall submit information regarding proprietary system of piling as per Clause 115.1

The Contractor in his methods statement shall include the procedure for carrying out initial and routine tests of piles. The format for reporting test results shall be included in the methods statement.

**Clause 1101.4** Add the following as sub-clause 1101.4

The scope of work shall comprise the following:

- a) Providing all materials including concrete, reinforcing steel, temporary and permanent casing as required, labour and equipment for installation of bored cast-in-situ piles in any situation including marshy soil, water logged and back waters of sea.
- b) Initial and routine testing of piles.
- c) Integrity testing of piles as per provisions of bid documents.
- d) Provision of access to movement of Equipment, barricading where necessary, pollution control measures including measures to control noise to minimum acceptable levels and site clearance.

**Clause 1104 MATERIALS**

**Clause 1104.2** Add at the end of first sentence the following:

Concrete to be used in cast-in-situ piles shall be grade as indicated in drawings.



**Clause 1115 IMPORTANT CONSIDERATIONS INSPECTION /PRECAUTIONS FOR DIFFERENT TYPE OF PILES**

**Clause 1115.2.7**

**Clause 1115.2.7.1** "For large diameter piles, it is essential to conduct to non-destructive tests to evaluate the integrity of piles.

Integrity testing of piles shall be conducted by a sub-contractor nominated by the Employer.

Objective of testing is to detect pile defects, including cracks, soil intrusions, voids, variation in pile diameter and pile length.

The nominated sub-contractor shall design the instrument system and testing procedures and provide personnel and instruments for carrying out the tests.

A method statement detailing the testing procedure including reporting test results shall be submitted to the Engineer at least 28 days before commencement of tests for his approval.

The contractor shall provide all reasonable facilities to the nominated sub-contractor. The contractor shall provide all inserts provided in detailed drawings.

**Clause 1115.2.7.2** At least 15 days shall elapse between the installation of piles and sonic testing of piles. Piles with unacceptable defects shall be rejected by the Engineer. Remedial measures as directed by the Engineer shall be taken by the Contractor at his own cost. Concreting of pile caps shall commence only after the piles are accepted by the Engineer.

**SECTION 1500 FORM WORK**

**Clause 1501 DESCRIPTION**

The clause shall read as below:

The contractor shall prepare a formwork mobilization and utilisation plan and submit the plan for Engineer's approval at least 28 days before the commencement of construction of structures. The requirement of formwork shall be worked considering the overall construction programme of all the structures in the contract. Sufficient formwork shall be mobilized, to enable to the structure to be cast in one or more stages, as specified in the drawings. The plan shall take into account the time required for erection of formwork, retention in position, stripping, removal and subsequent use in the next and subsequent structures.

Notwithstanding Engineer's approval of mobilization plan, if due to any reason, Contractor has to arrange additional formwork, to meet the requirements of the construction program, it shall be done by the contractor without any extra cost to the Employer.

**Clause 1502 MATERIALS**

Para 2 shall read as follows:

Only steel formwork shall be used except in cases where application of same is not practical. The steel used for forms shall be of such thickness that the forms remain true to shape. All bolts should be countersunk. The use of approved internal steel ties or plastic spacers shall be permitted. Structural steel tubes used as support for forms shall have a minimum wall thickness of 4 mm."

**Clause 1503 DESIGN OF FORMWORK**

**Clause 1503.2 The following shall be added to this Clause**

"For distribution of load and load transfer to the ground through staging, an appropriately designed base plate must be provided which shall rest on firm sub-stratum".

**Clause 1504 WORKMANSHIP**

**Clause 1504.1** Add the following at the end of Clause 1504.1

The loading from the formwork shall be distributed to the soil or the permanent works below (e.g. pile cap) in such a manner that any total or differential settlement is within acceptable limits.

**Clause 1506 PRECAUTIONS**

Add the following as items (vii) and (viii) of this clause:

- vii) Adequate support against side sway and lateral loads due to construction operations and wind shall be provided.
- viii) Forms shall be rigid and of adequate section to reduce deflections. Forms shall have sufficient rigidity to resist horizontal pressures caused by flowing concrete resulting from use of superplasticisers. The formwork shall resist the lateral pressure caused due to fast rate of placement by concrete pumps.

**Clause 1509 RE-USE OF FORMWORK**

This Clause shall read as under:

"After forms are stripped, all materials to be reused shall be thoroughly cleaned. Holes bored through sheathing for form ties shall be plugged by driving in common corks or foamed plastics. Patching plaster may also be used to fill small holes. After cleaning and before re-fixing, each formwork shall be got approved from the Engineer.

Formwork and staging shall be so used so as to maintain quality of the exposed surface. However, if in the opinion of the Engineer, any particular panel/member has become unsatisfactory for use at any stage, the same will be rejected.

All bent steel props shall be straightened before reuse. The maximum deviation from straightness is 1/600 of length. The maximum permissible axial loads in used props shall be suitably reduced depending upon their condition.

**Clause 1510 SPECIALISED FORMWORK**

Replace the word "plywood" by "marine plywood" in the fifth paragraph of this clause.

**Clause 1513 RATE**

Add the following at the end of the first para:

"The unit rate shall also include all costs for preparation of erection scheme, designs of false work and formwork and their approval".

**SECTION 1600 STEEL REINFORCEMENT (UNTENSIONED)**

**Clause 1604 BENDING OF REINFORCEMENT**

Paragraph 1 shall be read as follows:

The reinforcement shown on the drawings shall be considered merely symbolic representations of the shape and position and shall not be the contractor to justify any deviation from the stipulated requirements. Bar bending schedules and any supplementary drawings as may be required shall be furnished by the contractor and got approved by the Engineer before start of work. The bending schedules shall state the number, shape and length of bar and weight in respect of each type. System of bar reference should be coherent and systematic. A separate bar bending schedule shall be prepared for auxiliary bars like spacers chairs etc.

**Clause 1605 PLACING OF REINFORCEMENT**

Add the following as sub-para (f): to this clause:

**Tolerances:**

1. Tolerance of cover: Deviation shall not exceed + 10mm. No negative tolerance is allowed.
2. Tolerance in position: Tolerance for deviation from the positions shown in the drawings shall not exceed the following:

<b>Structural Depth d (mm)</b>	<b>Tolerance (mm)</b>
d<1000	<10
1000<d<2000	<9.91d
2000<d	<20

**SECTION 1700 STRUCTURAL CONCRETE**

**Clause 1704 PROPORTIONING OF CONCRETE**

Add the following at the end of this Clause.

"In proportioning concrete, the quantity of both cement and aggregate shall be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags shall be weighed separately to check the net weight. Where cement is weighed from bulk stock at site and not by bag, it shall be weighed separately from the aggregates. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean, and serviceable condition. Their accuracy shall be periodically checked".

"It is most important to keep the specified water- cement ratio constant and at its correct value. To this end, moisture content in both fine and coarse aggregates shall be determined as frequently as possible, frequency for a given job being determined by the Engineer according to the weather conditions. The amount of mixing water shall then be adjusted to compensate for variations in the moisture content. For the determination of moisture content in the aggregates, IS: 2386 (Part III) shall be referred to. Suitable adjustments shall also be made in the weight of aggregates to allow for the variation in weight of aggregates due to variation in their moisture content".

**Clause 1704.4 Additional Requirement**

In para (a) substitute "0.06%" for "0.1%", "0.06%" for "0.2%"; and: 0.1%" for "0.3%" for the three items respectively.

**Clause 1705 ADMIXTURES**

This Clause shall read as under:

"Duly tested admixtures/additives conforming to IS: 6925 and IS: 9103 (without replacement of cement) may be used subject to satisfactory proven use, with the approval of the Engineer. Admixtures generating Hydrogen or Nitrogen and containing chlorides, nitrates, sulphides, sulphates and any other material liable to affect the steel or concrete shall not be permitted"

"The general requirements, physical and chemical requirements shall be as per Clause 1012."

**Clause 1706 Size of Coarse Aggregate**

Table 1700-7 in this clause shall read as under:

Components	Nominal size of coarse (mm)
i) RCC well curb	20
ii) RCC/PCC well staining	40
iii) Well cap or pile cap	
Solid type piers & abutments	40
iv) RCC work in girders, slabs, Kerb, approach slab, piers and abutments, pier/abutment, caps, piles	20
v) PSC work	20
vi) PCC in bottom plug and top Plug/ intermediate plug	40
vii) RCC work in wearing coat and handrails	12.5
viii) Any other work	As specified or as directed by the Engineer

**Clause 1707 EQUIPMENT**

Para 1 of this Clause shall read as under:

"Unless specified otherwise, equipment for production, transportation and Compaction of concrete shall be as under":

- a) For production of concrete.
  - i) "Batching and mixing of the concrete shall be done only in a concrete batching and mixing plant fully automatic with a minimum capacity of 15 cum. per hour. The plant shall be approved by the Engineer".
  - ii) In special cases, for culverts, the Engineer may allow mixing of concrete by a diesel or electrically operated mechanical mixer with integrated weigh batching facility having a capacity of 500 litres and automatic water measuring system."

Last line of Para 3 of this clause shall read as under:

Measurement of cement + 3 percent of quantity of cement in each batch facilitate removal of laitance.

**Clause 1716 TOLERANCES**

Add the following at the end of Clause.

"In the absence of any information in drawings or specifications, for particular cases, the following limitations shall apply.

Dimension (mm)	Tolerance (m)
'a'	$\delta a = (a_{\text{nominal}} - a_{\text{actual}})'$
$a \leq 200$	$\delta a < 5$
$200 < a \leq 2000$	$\delta a < 3.5 + 0.0075a$
$2000 < a$	$\delta a < 16.5 + 0.001a$

**Deviations from Position etc.**

- a) Deviation from specified position in plan       $\pm 10\text{mm}$
- b) Variation in levels at top       $\pm 10\text{mm}$
- c) Variation of reduced levels of bearing areas       $\pm 5\text{mm}$
- d) Variation in plump over full height of piers       $\pm 10\text{mm}$
- e) Surface irregularities measured with 3m straight edge
  - i) All surfaces except bearing areas       $\pm 5\text{mm}$
  - ii) Bearing areas       $\pm 3\text{mm}$

- f) Variation in length of superstructure – overall
- g) And length between bearings  $\pm 10\text{mm}$   
 $\pm 0.1\%$  of the Span length, whichever is lesser.

## **SECTION 2000 BEARINGS**

### **Clause 2001 DESCRIPTION**

Within 90 days of award of work, the Contractor shall submit detailed specifications, designs and drawings including installation drawings and maintenance manual, for the approval of the Engineer. Designs shall also include review and modifications of designs and drawings of bearings pedestals and other elements required for installation. The installation of bearings shall be carried out under the supervision of the manufacturer of the bearings. The contractor shall provide the bearings only from the manufacturer approved and enlisted by the Ministry of Road Transport and Highways.

### **Clause 2009 MEASUREMENTS FOR PAYMENT**

Add the following after para 2.

"Paper bearings shall be measured in square metres".

## **SECTION 2200 SUB-STRUCTURE**

### **Clause 2210 RATE**

This clause shall read as follows:

"The contract rate for masonry, concrete and reinforcement in substructure shall include all works as given in respective sections and cover the cost of incidental items like providing cofferdams, dewatering, providing special formwork, where necessary, and all other items for furnishing and providing substructure as mentioned in this section.

## **SECTION 2800 REPAIR OF STRUCTURES**

**Following new clauses shall be added.**

### **Clause 2816 DISMANLING OF DAMAGED AND EXISTING STRUCTURES**

The work shall be executed in accordance with MORT&H Specifications Section 200 Clause 202. All damaged concrete in wing walls, returns, piers and abutment shall be thoroughly inspected to identify the extent of dismantling. The decision of Engineer shall be final. Care shall be taken to avoid damage to any part of the existing structure. Dismantling work for railing and kerbs shall be done carefully such that the existing reinforcement, which will project into the new work, is not damaged or lost. Reinforcement shall be cleaned thoroughly.

Dismantled material shall not be stacked on the deck nor shall it be thrown below the bridge. It shall be neatly piled at points designated by the Engineer with all leads and lifts.

Water shall be sprayed to reduce dust while dismantling work is in progress. Dismantling work shall not be carried out during storms or heavy rain.

Goggles and gas masks shall be worn at the time of dismantling. Leather gloves shall be worn by the workers. Screens made of G.I. sheets shall be placed wherever necessary to prevent the flying pieces from injuring the workers.

Damage caused to any component of the bridge structure during removal operations shall be restored by the Contractor at his cost. The service line, if any, shall be disconnected/diverted before dismantling work commences.

**Clause 2816.1 Dismantling of Existing Railing, Kerbs, Footpath Slabs, Approach Slabs and Damaged Concrete Wing Walls>Returns, Piers and Abutments.**

Railing, kerbs, footpath slab, approach slabs and damaged concrete in wing walls/returns, piers and abutments of the existing structures shall be dismantled as shown in drawing or as directed by the Engineer.

**Clause 2816.2 Dismantling of existing damaged brick masonry in wing walls/returns, parapet, etc.**

Damaged brick masonry in wing walls/returns and all brick parapet shall be dismantled as shown as in drawings or as directed by the Engineer.

**Clause 2817 DOWEL BARS DECK SLAB AT LOCATIONS OF PARAPET AND EXPANSION JOINT AND GROUTING WITH EPOXY RESIN LOCATIONS SHOWN IN THE DRAWINGS.**

Holes shall be drilled vertically using drill machines. Care shall be taken that the holes are drilled vertical and the deck concrete is not damaged. It shall be ensured that buried reinforcement of the deck is not damaged due to drilling by avoiding locations above reinforcement. Rebar detector shall be used for this purpose. 16mm dia. Dowel bars shall be inserted in the hole and kept in undisturbed position with appropriate fixture. The annular space shall be filled by epoxy grouting.

Work of epoxy grouting shall be done in accordance with MORT & H Specifications Section 2800 clause 2803. It shall be ensured that the inside of the hole is dry.

Epoxy resin shall be Resicrete 21 or equipment with following properties.

Compressive strength - min 35 MPa at 24 hours

Tensile strength - 15 – 20 MPa at 7 days

Flexural strength - 30 – 40 MPa at 7 days

Viscosity @ 250 C - 900 – 1200 cps

**Clause 2819**

Leached, honeycombed, spalled concrete shall be repaired with average 20mm thick PMC mortar.



All loose concrete shall be chipped off with a chipping machine so that loose layers of concrete are removed exposing the reinforcement. All loose concrete sticking with the reinforcement shall be removed. Where reinforcement bars are already exposed, the chipping shall continue so as to expose half the diameter, prior to further treatment. The concrete surface shall be thoroughly cleaned with wire brush and oil free air blast. Where the damaged area are large, sand blasting should be done to clean the reinforcement and the surrounding concrete, if reinforcement is seen the same shall also be cleaned thoroughly. The reinforcement shall be coated with epoxy phenolic IP net based/epoxy zinc rich (80% zinc solid content) based protective coating within one hour of cleaning to prevent rusting. The PMC or epoxy based protective coating shall be brush applied in the cleaned reinforcement ensuring that full surface area is covered in accordance with the manufacturers recommendation.

Before applying PMC repair mortar the prepared concrete substrata shall be thoroughly soaked with clean water. Free surface water shall be removed before priming. The substrata shall be primed with PMC slurry.

Repair mortar shall be applied before primer has set i.e. within 20-30 minute. The mortar shall be applied with trowel and shall be well worked inside and compacted paying particular attention to packing behind and in between the reinforcement. The surface shall be smooth finished to match the adjacent surface. Unused mortar or mortar which has partially set shall not be used. Mortar shall be applied in layers to avoid sagging

Manufacturer's recommendation shall be followed.

**Clause 2820 SEALING OF CRACKS IN CONCRETE IN PIER/ABUTMENT CAPS, SLABS, GIRDERS, PEDESTAL WALLS ETC WITH EPOXY RESIN INJECTION.**

The work is to seal all cracks in concrete n pier/abutment caps, slabs, girders, pedestal walls etc.

The work shall be executed in accordance with MORT&H Specifications. Section 2800 clauses 2803 an 2804.

The cracks shall be sealed with epoxy mortar prior to injection. Epoxy for mortar shall be Resicrete 2115 or equivalent. Epoxy for injection shall be Resicrete 21 or equivalent.

**Clause 2822 APPLYING 1:3 CEMENT MORTAR TO EXPOSED SURFACE OF MASONRY OF EXISTING WING WALLS/RETURNS, ABUTEMENT PIERS.**

All exposed masonry surface of existing wing walls/returns abutments, piers etc. shall be provided with 20mm thick built up in 2 layers.

The work shall be in accordance with MORT & H Specifications Section 1300.

**Clause 2823 BUILDING UP OF EXISTING WING WALLS/RETURNS AND RETAINING WALL AT SIDE OF APPROACH SLABS WITH BRICK MASONRY AND FINISHING WITH 1:3 CEMENT MORTAR 20MM THICK.**

Existing wing wall and returns wherever deficient shall be built up and retaining walls shall be constructed at sides of the approach slabs as shown in the drawings.

The work shall be done in accordance with MORT & H specifications Section 1300. Masonry for construction of short retaining walls as sides of approach slab shall be laid over a 100 mm thick M 15 P.C.C. levelling course.

**Clause 2824 CLEANING OF EXPOSED CONCRETE SURFACE BY MEANS OF SAND BLASTING**

**Sand Blasting**

The contaminated, oiled or greased surface of concrete shall be cleaned by sand blasting if required after approval of the Engineer in charge.

The sand to be used for sand blasting shall be coarse sand. The affected surface shall be cleaned of all loose and foreign materials by sand blasting and subsequently with oil free air blast.

The items shall be measured in sqm of sand blasted surface. The rate shall be inclusive of subsequent cleaning of surface with oil free air blast, necessary working platform suitable protective screens, cleaning and disposing of debris within a lead of 50 m and other incidental charges.

**Section 2900 PIPE CULVERTS**

**Clause 2904** Delete the word ramming in line 6 of para (i) and substitute with 'Roller / or plate vibrator'

**Clause 2907 BACKFILLING**

Second sentence of the clause shall be replaced as below:

"The backfill shall be with selected granular material of approved quality"



**ADDITIONAL TECHNICAL SPECIFICATIONS**

## APPENDIX - I

### GUARD POSTS

#### 1 GENERAL

The work covers the construction, supply, priming, painting & fixing of guard posts at locations as shown on the drawing(s) or as directed by the Engineer.

Guard posts shall generally be located at all horizontal curves (<1000m radius) where metal beam crash barrier has not been provided.

**1.1** The posts shall be of concrete grade M25 and shall conform to IS 10262-1982. Guidelines for concrete mix design. The precast member shall be properly checked against spalling, bruises, cracks etc. after 28 days curing to the satisfaction of the Engineer.

The posts shall be fixed at-places as shown in the drawing as decided by the Engineer with the bottom 470 mm below proposed hard shoulder finished surface. The fixation shall be such that it shall not get tilted or dislocated under normal condition.

After erection, guard posts shall be painted with one coat-primer and two coats of colour paint (white & black). All colours shall be of ready mix oil bound and shall be approved by the Engineer. There shall be three white and three black bands alternately placed.

#### Measurement for payment of posts

The measurement shall be in number.

#### Rate

The contract unit rate for guard posts shall be paid in full compensation for furnishing of all labour, materials, tools, equipment for construction, fixing, painting at site and all other incidental costs necessary to complete the work to these specifications.

## Appendix- II

### PVC RIGID PIPES

1 The PVC rigid pipes used as storm water drainage or conduits under footpath, kerb or median of bridges and structures shall conform to IS: 4985 – 1988 suitable to sustain a working pressure of 4.0 kgf/cm<sup>2</sup>.

#### 2 Measurement for Payment

PVC rigid pipes shall be measured along their centre between the inlet and outlet ends in linear metres. No separate measurement shall be made for PVC pipes provided in the safety kerbs of structures because PVC pipes are included in the measurement of safety kerbs.

#### 3 Rate

The contract unit rate for the pipes shall include the cost of pipes including loading, unloading, hauling, handling, storing, cutting, laying in position and jointing all complete and all incidental costs to complete the work as per these specifications.

### Appendix – III

#### SPECIAL TECHNICAL SPECIFICATIONS FOR REMEDIAL WORKS

**1. Loosening and re-compacting the Embankment/Subgrade layers to receive next layer as per drawing & site requirement.**

Wherever necessary the already finished and left unattended, the top of embankment or subgrade layers shall be scarified and loosened up to required depth and spread back to required levels and camber as directed by the Engineer, including adding extra materials as found necessary, adding required watering and re-compacting by rolling (after conducting required OMC and MDD tests) to achieve specified compaction levels for the relevant layer. While scarifying and loosening and spreading back, all unwanted materials like grass, roots, waste materials dumped on the top surface shall be removed to the satisfaction of the Engineer.

The works of scarifying, loosening, re-spreading the materials after removing all unwanted materials, adding additional materials if necessary, watering to OMC levels and compacting to achieve required compaction level for that specific layer by rolling.

**Rate**

The area so scarified, loosened, extra materials brought and re-compacted shall not be measured separately and shall be considered as incidental to the works.

**2. Loosening and re-compacting the GSB layers to receive next layer as per drawing & site requirement.**

Wherever necessary the already finished and left unattended, the top of granular sub base (GSB) layers shall be scarified and loosened up to 100 mm depth and any extra GSB materials if needed to confirm to required grading specifications shall be added, and spread back to required levels and camber as directed by the Engineer, including required watering, and re-compacting by rolling (after conducting required OMC and MDD tests) to achieve specified compaction levels for that relevant layer. While scarifying and loosening and spreading back, all unwanted materials like grass, roots, waste materials dumped on the top surface shall be removed to the satisfaction of the Engineer.

The work shall of scarifying, loosening, re-spreading the materials after removing all unwanted materials, adding any new GSB materials if necessary at site, watering to OMC levels and compacting to achieve required compaction level for that specific layer by rolling.

**Rate**

The area so scarified, loosened, extra materials brought and re-compacted shall not be measured separately and shall be considered as incidental to the works.

**3. Loosening and re-compacting the WMM layers to receive next layer as per drawing & site requirement.**

### 3.1 Scarifying and rectifying the WMM first layer

Wherever necessary the already finished and left unattended, the top of WMM first layers shall be scarified and loosened up to 100 mm depth and any extra WMM materials if needed to confirm to required grading specifications shall be added, and spread back to required levels and camber as directed by the Engineer, including required watering, and re-compacting by rolling (after conducting required OMC and MDD tests) to achieve specified compaction levels for that relevant layer. While scarifying and loosening and spreading back, all unwanted materials like grass, roots, waste materials dumped on the top surface shall be removed to the satisfaction of the Engineer.

The work shall of scarifying, loosening, re-spreading the materials after removing all unwanted materials, adding any new WMM materials if necessary at site, watering to OMC levels and compacting to achieve required compaction level for that specific layer by rolling.

#### Rate

The rate shall include full compensation for scarifying, loosening, removing all unwanted materials, adding any new materials if necessary at site, watering to OMC levels and compacting to achieve required compaction level for that specific layer by rolling. The unit rate for scarifying and rectifying WMM first layer shall be in cum.

### 3.2 Scarifying and rectifying the WMM second layer

Wherever necessary the already finished and left unattended, the top of Wet Mix Macadam (WMM) layers shall be scarified and loosened up to 100 mm depth (where two layers of WMM have been completed). While scarifying and loosening, all unwanted materials like grass, roots, waste materials dumped on the top surface shall be removed to the satisfaction of the Engineer before scarifying. The scarified materials shall be taken to the mixing plant site inclusive of all leads and lifts and loading and unloading charges, required extra granular materials shall be added to the scarified materials to confirm to the grading specifications, remixed and brought back to the site and spread to required levels and grades using pavers and compacted by rolling to achieve required compaction levels as per the technical specifications already given for WMM layers. Before spreading the remixed materials, the scarified surfaces shall be cleaned properly, all loose particles shall be removed, and the scarified surface shall be watered to the required levels as per the specifications and directions of the Engineer, and shall be compacted by rollers (minimum 4-6 passes by rollers).

Levels shall be taken after setting the scarified surface by rolling and also after laying and compacting the fresh WMM layers to assess the quantities.

#### Rate

The rate shall include full compensation for scarifying, loosening, removing all unwanted materials, carrying the scarified materials to the mix plant site inclusive of all leads and lifts, loading and unloading charges, hire charges for tippers, adding any additional materials to confirm to the grading specifications, preparing scarified surface before re-spreading new WMM materials, spreading the newly mixed WMM materials using pavers and compacting

by rollers, including all charges for mixing in Plant, bringing the mixed materials to site at all leads and lifts and loading and unloading charges and hire charges for tipper, inclusive of all machinery hire charges for the required Plant and Machinery. The rates shall be based on cum basis and based on levels.

#### **4. Rehabilitation works on exposed DBM layer**

In any section along the finished DBM surface, distresses such as wider cracks, rutting and ravelling are noticed, excess bleeding remedial measures are to be carried out on such section before next layer is laid and this is considered as incidental to the works.

#### **Rate**

No separate measurements shall be taken for the above and shall be treated as incidental to the works.

#### **5. Repairs to the existing steel reinforcement and exposed concrete surface**

**5.1** In most locations, the length of reinforcement left exposed for extension (for laps etc.) along the retaining walls, drain side walls have become rusted or corroded and the same shall be thoroughly cleaned with proper wire brushes, sand blasted for adding laps or for prepared for further concreting. Any required treatment in consultation with the Engineer shall be applied over the exposed steel bars before concreting.

All exposed reinforcement shall be cleaned in accordance with the following:

- (a) Where exposed reinforcement is sound and does not show any signs of heavy corrosion or pitting other than typical rusting, it shall be mechanically cleaned to remove rust and loose mill-scales. It is always preferable to clean the reinforcement to a bright condition.
- (b) Where exposed reinforcement shows of heavy corrosion or deterioration it shall be cleaned by sand blasting or proprietary rust removing compound if permitted by the Engineer and then treated as given in subsequent Para of this specification.

Within one hour of preparing and cleaning the reinforcement shall be coated with specified primer. The primer should be brush applied on to the cleaned reinforcement ensuring that the full surface area is covered in accordance with the manufacturer's recommendation.



### **Repair of Corroded Reinforcement**

The diameter of the reinforcement which shows sign of heavy corrosion should be measured by callipers or other approved instrument. If it is found that cross-section of the existing reinforcement has reduced by more than 20% of the original cross-section, the reinforcement has to be replaced by HYSD bar of equal diameter or higher diameter. HYSD bars shall conform to IS 1786 and Clause 1009.3 of MOST specifications.

### **Procedure for replacement of corroded/damaged reinforcement**

The concrete surface in the vicinity of the corroded reinforcement has to be chipped-off for 1m length on both sides. The chipping shall continue till full circumference of reinforcement and further depth of 10mm is exposed. The chipped surface is to be cleaned thoroughly by sand blasting. New HYSD bars cut to pieces are to be placed by the side of the old reinforcement and fixed to it to ensure proper bonding after providing required lap length. After replacement, it is primed using specified reinforcement primer.

### **Rate**

The rate shall include full compensation for cleaning the corroded steel reinforcement, applying any treatment as above and as finalized with the Engineer and shall be paid in tonnes.

**5.2** In some locations, the exposed reinforcement has been cut and taken away due to vandalism. In such of those locations, the existing concrete shall be chipped away to provide suitable lap length. The steel reinforcement shall be cleaned as in 5.1 (a) or 5.1(b) above. The dismantled concrete surface shall be smoothly levelled using chisels and sand blasted to have rough surface to add further concreting. All loose particles shall be cleaned. An epoxy resin coat as approved by the Engineer shall be applied over the dismantled and cleaned concrete surface before concreting to ensure proper bonding. All literature pertaining to the proposed epoxy resin shall be submitted to the Engineer along with the methodology for applying, manufacturers certificates, and approval for the type of epoxy resin shall be got from the Engineer, before applying the epoxy resin.

### **Procedure for sand blasting**

Dry coarse sand conforming to Zone I Defined in IS: 383-1970 (Reaffirmed 1990) shall be used for sand blasting purposes. Application pressure shall range about 8 to 10 kg per sqcm. Compressor used shall have minimum capacity of 10 Cum /min.

Sand blasting equipment used shall be from "Surface India Ltd., Jodhpur" or "Ashok Engineering Co. Ltd., Calcutta" or any approved equivalent make.

No separate payment shall be made for the above item, and it is incidental to repair works as applicable. It is highlighted that only a same item of the present specifications surface preparations (including sand blasting) is payable as measured item of work when specifically indicated.

### **Rate**

The rate for cleaning the reinforcement shall be as in 5.1(a) or 5.1 (b) above. The rate for adding new laps for the existing reinforcement shall be paid for tons as per BOQ item.

The rate for treating the old concrete surface shall include full compensation for chipping the already existing concrete layers, shaping the cut concrete surface by minor chiselling, cleaning the surface by sand blasting, applying epoxy resin coat, including the cost of epoxy resin and all other incidentals for this operation, and shall be paid in square meters.

### **5.3 Treating the existing surface before resuming balance concrete works**

In some locations the concrete works have been left incomplete. In such of those locations before resuming balance works, the existing concrete top surface joint shall be cleaned thoroughly, by wire brushes and by sand blasting to have a rough and clean surface for further concreting. All loose particles shall be removed and an epoxy resin coat as approved by the Engineer shall be applied over the cleaned surface before resuming balance works. All literature pertaining to the proposed epoxy resin shall be submitted to the Engineer along with the methodology for applying, manufacturers certificates, and approval for the type of epoxy resin shall be got from the Engineer, before applying the epoxy resin.

### **5.4 Repairing of Existing Uneven Concrete Surface**

In some locations the exposed concrete surfaces have uneven regulations like swelling of concrete at joints of vertical lifts of the structures and retaining walls. The concrete surface in the location of the joints has to be chipped off about 30 cms to 50 cms width on both sides of the joints depending upon surface unevenness of the joints. The chipping shall continue till where concrete surface of the structure will be is proper plumb and one plane. Then chipped surface of the concrete to be sand blasted as per procedure discussed in Str 5.2 to have a rough and clean surface for finishing. The epoxy mortar would be applied to the chipped concrete surface as per Technical Specification No. 2804 MORTH.

#### **Rate**

The rate shall include full compensation for cleaning by wire brushes, sand blasting, applying epoxy resin including the cost of materials and labour charges for applying. The rate shall be paid in square meters.

## **6. Adding reinforcement to existing structure by drilling holes**

### **6.1 General**

Location of holes to be drilled shall be marked in paint. Prior to marking holes existing rebars locations shall be determined to ensure that none of the existing rebar interferes the hole drilling. For locating rebar "Profometer -4" instrument of Aimil or approved equivalent shall be used.

The holes for adding rebars shall be drilled using a rotary hammering action unit and shall be either machine no. TE-24 or combi hammer no. TE-75 of Hilti make or approved equivalent. After drilling, the hole shall be cleaned prior to filling with approved epoxy mortar.



Epoxy mortar shall be packed into drilled hole. Thereafter reinforcement shall be inserted into the epoxy mortar packed hole. Some mortar should overflow upon inserting the rebar to show complete filling. Allow for complete curing before application of any load.

The length of hole to be drilled shall be ten times the dia of rebar (10\*dia). The correct drill diameter is important for the performance of the adhesive bond as well as for the economy of the application and shall be as per table give below:

Nominal	Recommended
Rebar diameter	Hole diameter
8 mm	12 mm
10 mm	14 mm
12 mm	16 mm
16 mm	22 mm
20 mm	28 mm
25 mm	32 mm
28 mm	36 mm

### 6.2 Measurements for Payment

Measurement for adding reinforcement to existing structure shall be paid based on actual number of bars so fixed, in tons, including the charges for drilling holes, packing with epoxy mortal etc.

### 6.3 Rate

The contract unit rate for adding reinforcement shall include cost of all materials, labour, tools & plants to fabricate and install reinforcement bar and other incidental expenses for satisfactory completion of the work as per the specifications. The contract unit rate shall also include full compensation for drilling holes including cost of all materials, labour, tools & plants, scaffolding, surface renewal, locating existing bars, filling drilled holes with epoxy grout, mortar, testing and other incidental expenses for satisfactory completion of the work as per the specifications.

### 7. Trimming and Shaping of Slopes of Embankment

- 7.1** The partially finished embankment needs to be trimmed to remove all surplus material, ensuring that the remaining material is to the desired density and conforms to specified shapes and side slope.
- 7.2** This includes also restoration of rain cuts, in areas where material has been washed out, and/or depressions which shall be filled using the soil coming from trimming, benching for 300 mm width, laying material in layers not exceeding 200 mm compacted thickness and compacting with plate compactor or power rammers to restore the designed alignment.
- 7.3** All the excavated material shall be the property of the employer. Suitable material obtained from trimming shall be used for filling for roadway embankments.

Unsuitable and surplus material, which in the opinion of the Engineer cannot be used in the works shall be removed from site by the Contractor and disposed of at approved locations as advised by the Engineer.

**7.4 Measurements for payments:**

Trimming of embankment slopes and restoration of rain cut, embankment slopes with material shall not be measured separately and shall be considered as incidental to the works.

**7.5 Rate**

Trimming of embankment slopes and restoration of rain cut, embankment slopes with material shall not be measured separately and shall be considered as incidental to the works.

## Appendix-IV

### Construction of Speed Breaker

**Speed Breaker shall be constructed in approach roads at approved locations as per the following procedure.**

#### 1. General

The construction of speed breaker shall be in accordance with the approved drawings. The drawing shall confirm the recommendations of IRC-99-1988.

#### 2. Material

Speed breakers shall be constructed with bituminous macadam conforming to clause 504 of the technical specifications. BM material shall be laid after cleaning the bituminous surface and applying tack coat. Compaction of the speed breaker shall be carried out using 10 tonne capacity static roller.

#### 3. Measurement

Speed breaker shall be measured in linear metre.

#### 4. Rate

The Contract unit rate shall include cost of materials including loading and unloading hauling, laying, compacting and all incidental costs to complete the work as per specification.

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

COCHIN SMART MISSION LIMITED

TECHNICAL SPECIFICATIONS

(SECTION VI)

ANNEXURE to PART-1

LANDSCAPING & STREETSCAPING WORKS

Contractor

Procuring Entity / Employer

### **1.1. PAVER BLOCKS FOR PAVEMENTS, CYCLE TRACKS AND PARKING AREAS**

For pavements and cycle lanes, providing and laying 60mm thick grey or coloured reflective rubber moulded M-35 Paver blocks over a bed of sand (min. 75mm thick). For car parking areas, providing and laying 80mm thick grey or coloured reflective rubber moulded M-30 Paver blocks over a bed of sand (min. 75mm thick). For bus bay areas areas, providing and laying 100mm thick grey or coloured reflective rubber moulded M-40 Paver blocks over a bed of sand (min. 75mm thick). Job includes spreading sand on excavated and compacted sub base / PCC bed, compacting sand by ramming and interlocking them with the use of a suitable plate vibrator, job includes all incidental works like cleaning the site of debris, etc.

The paver blocks supplied should adhere to the following requirements: Material – 60 mm (M-35)/ 80mm (M-30)/ 100mm (M-40) thick (respectively, as stated above) Rubber Moulded Reflective Paver blocks rough finished conforming to IS-15658:2006 compressive strength and grade. Manufacturer Sirex or equivalent.

Where specified in plan, cycleways are also proposed in 100 mm thick M-20 RCC with minimum reinforcement.

#### **1.1.1. Scope of Work:**

Excavation and compaction up to 300mm depth for the whole area of pavements/ parking / cycle lanes as per drawing in all sorts of soil including removal and stacking / preserving of top 200mm of 'Top Soil' as per GRIHA standards for top soil preservation. Other loose soil / debris shall be removed / carted from site of excavation up to 5 km. The scope of work shall include supplying and laying of precast paver blocks, at site. Since the site is a public place, care should be taken to ensure that the routine activities shall not be disturbed. The job of laying may need to be carried out during night also for no extra cost. The work shall be executed to perfect line and level as per instructions of Engineer in charge. Coloured concrete paver tiles shall be manufactured and shall adhere to clause 4.4 of IS 15658:2006.

The contractor shall guarantee that all materials and components designed, fabricated and supplied and laid by him shall be free of any type of defects due to faulty material / workmanship / laying / erection for a period of three years from the date of completion of work, which shall be considered defect liability period. Within this defect liability period, the contractor shall render free maintenance failing which the same shall be deducted for the retention cost as per contract. All modes of measurements shall be in Square meters.

### **1.2. GARDEN / GRASS PAVER BLOCKS FOR FOOTPATH AREA**

Providing and laying 60mm thick grey or coloured reflective rubber moulded M-30 Grass Paver blocks of 300 x 300 x 60mm or 600 x 400 x 60mm over a bed of Stabilized soil with mulch as per Landscape architects specifications (min. 50mm thick). Job includes spreading sand on excavated and compacted stabilized soil base over compacted sand / PCC bed as specified by Landscape Architect, compacting sand by ramming and interlocking them with the use of a suitable plate vibrator, job includes all incidental works like cleaning the site of debris, etc. Edge protection of paved area using concrete retaining curbs as per Engineers instructions. The paver blocks supplied should adhere to the following requirements:

Material – 60mm thick Rubber Moulded Reflective Paver blocks rough finished of M-30 conforming to IS-15658:2006 compressive strength and grade of M-30 meant for light traffic as per Table 1 IS 15658:2006. Manufacturer Sirex or equivalent. Size 600 x 400 x 60mm or 300 x 300 x 60mm as selected by Architect / employer.

**1.2.1. Scope of Work:**

Excavation and compaction up to 300mm depth for the whole area of Footpath in all sorts of soil including removal and stacking / preserving of top 200mm of 'Top Soil' as per GRIHA standards for top soil preservation. Other loose soil / debris shall be removed / carted from site of excavation up to Municipal dumping yard or as specified by Engineer. The scope of work shall include

- 1.2.1.1.** Laying of stabilized soil using conserved top soil mixed with mulch as per specification and compacted using plate compactors to achieve minimum 95 percent Standard Proctor Density per ASTM D 698 for pedestrian areas. Verify subsoils have a permeability between 0.5 and 3.0 inches per hour.
- 1.2.1.2.** Verify that geotextiles, if applicable, have been placed in accordance to specifications and instructions of Engineer / Architect.
- 1.2.1.3.** Install edge restraints per the drawings and manufacturer's recommendations.
- 1.2.1.4.** Supplying and laying of precast Grass paver blocks, at site. Since the site is a public place, care should be taken to ensure that the routine activities shall not be disturbed. The job of laying may need to be carried out during night also for no extra cost. The work shall be executed to perfect line and level as per instructions of Engineer in charge. Coloured concrete paver tiles shall be manufactured and shall adhere to clause 4.4 of IS 15658:2006.
- 1.2.1.5.** The contractor shall guarantee that all materials and components designed, fabricated and supplied and laid by him shall be free of any type of defects due to faulty material / workmanship / laying / erection for a period of three years from the date of completion of work, which shall be considered defect liability period. Within this defect liability period, the contractor shall render free maintenance failing which the same shall be deducted for the retention cost as per contract. All modes of measurements shall be in Square meters.

**1.3. PLANTING AND LANDSCAPING**

**1.3.1. Planting of Shrubs, Creepers, Ground Covers**

Plant material shall be well formed and shaped true to type and free from disease, insect and defect such as knots, windburn, sun-cold, injuries, abrasion or disfigurement. All plant materials shall be healthy, sound, vigorous with good foliage, and free from plant diseases, insect pests, or their eggs, and shall have healthy well-developed root systems. Plants supplied shall be conforming to the names listed on the plant list. No plant materials will be accepted if branches are damaged or broken. All material must be protected from the sun and weather until planted.



Preparation of soil for grass, ground cover, edges, shrubs and flower beds: Then prepare the same soil with 2-3" thick layer of well decomposed, weed free farm yard manure or vermicomposting. Treat the soil with chlorophyriphos / Lindane / Neemcake depends upon the infestation of soil borne pests. Treat the soil with proper herbicide to control the weeds only on need basis. Finally level the soil as per the drawing or planting details.

Preparation of pits for shrubs, creepers and hedges : The bed shall be prepared with good earth mixed with 1/3rd quantity of decomposed faryard manure along with a sapling of shrubs, ground covers, lilies, suckering plants etc. as per design plant spacing – 30-60 cm. maintaining( application of liquid manures/ growth regulators/ pesticides as per need, weeding regularly so as to keep the plant healthy all the time) it for a period of 12 Months from the date of virtual completion of development work

Planting shrub/ground cover- Planting of shrub in the bed prepared earlier by filling garden soil and manure (67:33 ratio).Planting the shrub with root ball in the pit (tin grown / poly bag grown) after removing carefully and without disturbing the root. Pressing the soil firmly around the tree / shrub planted. Preparing the bed around the shrub and watering after staking and tying .Maintenance of shrub/ground cover up to 12(Twelve)months by regular watering and attending the inter-cultivation practices such as weeding, racking, watering gap filling ,free of weeds by regular hoeing etc. The plant should be well maintained, disease free, well-trimmed at the time of handing over. In case of death of the plant the contractor need to replace the same with equally well grown healthy plant. Nurture the shrubs/ground cover with organic solid manures and liquid manures, spray bio-insecticides, parasites, predators to protect the trees from pest and disease. Amend the soil on regular basis with proper soil amendments to keep the pH level between 7 - 7.5.

Planting hedges / edges - Planting of hedge / edge in the ground prepared earlier by filling garden soil and manure. Preparing a pit of require size (for accommodating the root ball of plant) Planting the plants in 2/3 rows (as per instructions) at root ball removed carefully and without disturbing the root ball from poly bag. Pressing the soil firmly around the plant. Preparing the basin for watering. Maintain hedge / edge up to twelve months by regular watering and attending the inter-cultivation practices such as weeding, raking, gap filling, trimming and pruning etc. The hedge / edge should be well maintained, disease free, well-trimmed at the time of handing over. In case of death of the plant the contractor need to replace the same with equally well grown healthy plant.

Planting Ground cover - Planting of ground cover plants in the ground prepared earlier by filling garden soil and manure preparing a pit of require size in the ground. Planting the ground cover plant root ball at nine inches apart in the pit after removing carefully and without disturbing the root ball. Pressing the soil firmly around the plant preparing the basin around the plant watering. Maintenance of ground cover up to two month by regular watering and attending the inter-cultivation practices such as weeding, raking, gap filling, trimming and pruning etc. The ground maintained, disease free, well-trimmed at the time of handing over. In case of death of the plant the contractor need to replace the same with equally well grown healthy plant.

#### **1.4. MAINTENANCE SCHEDULE OF PLANTING & LANDSCAPING WORKS**

##### **1.4.1. General Obligations**

- a. The Contractor shall maintain the works for the maintenance period of twelve months from the date of completion.
- b. The extend of the landscape to be maintained by the Contractor shall be deemed to cover and include all softscape landscape areas within the overall project boundaries as shown on the drawings including any existing soft landscape not affected by the Sub-Contract works and retained intact or nearly so through the end of the Sub-Contract period as well as all the landscape works covered in the Sub-Contract scope of works. No additional charges will be allowed unless specifically agreed to by the Landscape Architect in writing.
- c. The Contractor's Horticulturist or Landscape Architect shall inspect the site every day and shall submit report to the Contractor on their actions and closure of the pending works. Also on weekly basis, the Contractor's Horticulturist and Landscape Architect shall prepare a brief schedule of operations planned for the week with target dates.
- d. The daily report and the weekly schedule shall be running record of proposed operations which would be checked at the maintenance inspections every month. If in the opinion of the Landscape Architect/Site-In-Charge, the maintenance works have not been satisfactorily carried out according to site conditions and the specifications, the payment will be withheld until the works have been satisfactorily carried out besides the penalty as in the penalty clause.
  - i. The Contractor shall take all necessary measures to ensure that all pot plants, trees and shrubs and other plants shall thrive and become established within this period. All landscape areas will be inspected and list of remedial works issued after each inspection. All items on the remedial lists are to be carried out by the time of the next inspection.
  - ii. The Contractor shall keep the landscape areas clean and tidy at all times and dispose of all waste materials arising from the cleaning.
  - iii. If the Contractors works are found to be unsatisfactory, payment shall be withheld and the maintenance period extended for the period of time that the landscapes maintenance has not been satisfactory. All cost associated with the extension of time shall be borne by the contractor.

##### **1.4.2. Maintenance Of Planted Areas: Trees, Shrubs, Climbers, Herbaceous Plants And Groundcovers Including Lawn**

- a. The Contractor shall water all trees, palms, shrubs, groundcover, herbaceous plants and other planting areas as often as necessary to keep the ground moist all around and to the full depth of the roots.
- b. All planting beds are to be kept in a weed free condition with a weeding operation as per maintenance schedule or more regularly as required. All weeds, stones and rubbish collected from this operation shall be removed from the site by the Landscape Contractor.

- c. Firming up and adjusting of stakes/ties shall be carried out monthly to ensure that the trees and shrubs are firmly held in ground. If required, guy ropes or tree ties shall be adjusted, tightened or loosened. If tree ties or ropes are rubbing the bark of the trees, the ties are to be taken off and retied. Any damaged branches are to be carefully pruned and the wounds sealed.
- d. All protective fencing is to be maintained and kept in good condition as long as required on site.
- e. All shrubs and groundcovers are to be reviewed monthly and pruned as and when required during the Maintenance Period to promote bushy growth and good flowering characteristics. The shrubs shall be checked and all dead wood, broken, damaged or crossed branches shall be cut back, depending on species.
- f. The Contractor shall on continual basis supervise and attend to fertilizer needs/disease control/termite or fungus control as maintenance operations during the entire period of contract. An approved fertilizer/insecticides/pesticides shall be applied to each plant.
- g. The Contractor shall make regular weekly checks to ensure that the plant material is insect and pest and free.

#### 1.4.3. Maintenance of Lawn Areas

The lawn shall be trimmed and maintained properly without any weeds.

#### 1.4.4. Details of Periodic Maintenance Activities

SL. NO	OPERATION	FREQUENCY (TIMES)	PERIOD/DURATION AFTER HANDING OVER
1	Irrigation		As per Demand or as specified under
(a)	In Summer	15	Month- Every Alternate day
(b)	In Rainy Season	5 to 7	Monthly or as per climatic condition
(c)	In Winter	10	Monthly

#### 1.4.5. Planting Practices-Application

##### 1.4.5.1. Requirement of Soil Preparation, Planting and Maintenance Materials

##### a. Soil Conditioner

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Soil Conditioner shall be Peat Moss, organic compost composted rice hulls or other approved fibrous organic matter suitable for mixing with topsoil to make a friable growing medium for plants. It shall be resistant to rapid decay, free from soluble salts (below 900ppm), pH 6-7, free from large lumps or debris.

Coco-Peat will not be accepted.

A sample shall be submitted to and approved by the Landscape Architect prior to installation.

**b. Organic Compost**

Organic compost shall be an organic vegetable compost produced thorough a horticultural or industrial composting process. Compost is to be clean, decomposed, smell free, and free of any debris, refuse, clay or visible fungus. A sample and test data is to be submitted for approval before use. All compost is to be sterilized before being packed for transport. Any odorous materials delivered to site will be rejected. Any vermin resulting from use of organic compost will have to be controlled by the Landscape Contractor within 12 hours.

**c. Peat Moss**

Peat Moss shall be fibrous fresh water peat from vegetable fibre. Peat will have a pH of 5.8 – 6.5 and shall be free of soluble salts greater than 900 micromos; Peat shall be free of lumps, sticks or stones greater than 5mm.

**d. Composted Rice Hulls**

Rice hulls shall be partially composted and free from live rice or weed seeds. The rice hull compost shall be nitrogen stabilized and free of particles greater than 5mm.

**e. Sand**

Sand shall be clean, coarse, well graded material, free from soluble salts. Particles shall range in size so that 80-100% passes the 1mm sieve and 0-50% passes the 250 micron sieve.

**f. Fertilizers**

Chemical fertilizers shall be approved granular fertilizers. Fertilizer may be single element or compound, normal or slow release compound fertilizers. They shall be stored in waterproof sealed bags under shelter away from water and direct sunlight. Samples shall be submitted to, and approved by the Landscape Architect, before use in the Works.

Organic fertilizers shall be organic products such as organic liquid fertilizer, pellets or granules manufactured primarily from organic materials. These products are to be from accredited sources and technical data indicating sources of origin and manufacturing process must be submitted and approved before use. Animal by-products must be sterilized before being packed for transport and odorous materials used on site will be rejected.

**g. Mulches**

Mulches shall be an approved friable-composted organic material such as Oil Palm husks, organic compost or an approved mix. Coco-peat will not be allowed unless mixed in a proportion of 50-50 with another mulching material free from soluble salts or toxic materials and resistant to rapid decay. Mulches shall have a pH of 5.5 - 7.0. Samples are to be submitted to the Landscape Architect and approved before use.

Mulches are to be applied in a 50mm thick layer over the entire surface of shrub and groundcover areas. Mulching is to be re-applied to expose soil in planting areas every 3 months after initial installation until the end of the maintenance period or until complete surface cover by vegetation is achieved.

Initial mulching is to take place within two days of installation of planting.

**1.4.5.2. Staking & Supports**

**a. General**

- i. Stakes shall always be used when planting instant trees, standards and single stem palms and for tall shrubs as indicated in the drawings.
- ii. Stakes shall be mangrove poles, bamboo or equal and shall be appropriate to the size of the plant to be supported.

**b. Guying**

- i. Guying shall be used for large trees or palms. A minimum of three wire guys are to be used per tree. Each guy wire is to be fastened by a loop around the lowest branches of the tree at the junction with the main trunk or stem. Loops are to have protective rubber or plastic hose to prevent chafing and are to be fastened back to the guy wire by means of U-clamps. Wire shall be 2.5mm PVC coated GI wire, green colour. Palms shall have 5mm x 3mm x 30mm battons fastened about the trunk with GI wire at the height where the guy wires are to be secured. Guy wires will fasten to the battons and not to the main trunk.
- ii. Guy wires are to be fastened at ground level to short stakes firmly driven at an angle into the ground. Stakes shall be 5mm GI coated angle iron or 75mm mangrove. Stakes shall be a minimum length of 600mm and are to be driven deep enough to resist movement. A notch is to be made near the top of each stake for the fastening of the guy wire. Stakes shall be positioned equally around the tree and shall extend at least 300mm beyond the tree pit. Distance away from the tree shall be gauged on site to provide firm and secure guying. Distance of stakes and final positions shall be finalized on site to provide firm and secure guying.
- iii. Each guy wire is to have one turnbuckle located near the fastening to the stake. Guy wires are to be kept properly tension and adjusted to maintain the tree in a vertical position without guy wires being rigid.

**c. Double Stacking**

- i. Double staking shall be used for standard trees. Two 50mm x 50mm stakes shall be driven into the ground vertically on either side of and outside the rootball of the tree so as to form a straight line with the stem at the center. Stakes shall be driven in to penetrate the bottom of the tree pit and be deep enough to resist

lateral movement when tested. Stakes shall not extend beyond the lowest branch of the tree and if necessary are to be sawn off at the top.

- ii. Fastening or securing of the tree may be carried out by using either :
  - a. Cross bar – a wooden cross bar of same section as the stakes is fastened in a horizontal position to the outside of the stakes by nails or tying securely at a level below the lowest branch. The tree is fastened to the cross bar with a single adjustable tie of an approved rubberized or plastic type with a spacer and shall be fastened to prevent any chafing or abrasion of the bark. Nails or fittings are not to be driven into the tree trunk.
  - b. Wire/Hose loops – Two separate wire or rope loops are made about the stem just below the lowest branch with each being fastened back to one of the vertical stakes. Each loop is to have a protective outer covering or sheath of rubber hose to prevent chafing or abrasion of the bark. The wire is to be fastened to the stakes in a manner that allows adjustment of the tension to be made easily. Tension on each wire to be equal to maintain the tree in a vertical position. The wire shall be 2.5mm PVC-coated GI wire, green colour.
- iii. Where directed by the Landscape Architect the tree may be secured with a second set of loops at a lower level.

**d. Single Staking**

Single Staking shall be used for field trees. A single 50mm x 50mm stake is driven vertically into the ground 150mm – 250mm away from the tree. The stake is driven down beyond the base of the tree pit and shall be firm when tested. The top of the stake shall be 100mm below the top of the tree. Ties are to be fastened to avoid rubbing, chafing or abrasion of the bark.

**e. Dead man guying**

“Dead Man” Guying shall be used where directed by Landscape Architect. This method of supporting trees is for use in areas where other conventional methods of support are not feasible. Prior to backfilling two pairs of preservation treated hardwood planks, minimum 100mm x 50mm, are laid across the top of the rootball at right angles so that the trunk or stem is enclosed in a square. The timber planks should be positioned as far out towards the edge of the rootball as possible but kept approximately 100mm in from the edge. Two pairs of galvanized or stainless steel cables are then led over at right angles to the timber planks and the ends firmly fastened into the ground at the base of the rootball or preferably fastened to a structure nearby. Twin buckles at the mid-point of each cable are installed to tightened the cables to a suitable degree. Cables should be tightened only to hold the root-ball firm. Over-tightening may cause the rootball to settle deeper into the ground than desired. Wherever “Dead Man” guying is directed refer to the Sub-Contract drawings for particulars. If Dead Man guying is directed without a drawing the Landscape Contractor is to notify the Landscape Architect.

**f. Climber Wires**

Climber wire for training climbing plants against walls shall be approved lightweight PVC coated wire mesh, fixed at 600mm intervals to GI screw eyes. Maximum mesh coverage shall be 12 Months 0mm high x 2400mm wide. The climbing plants shall be trained through the wire mesh with the shoots directed upwards and tied.

#### 1.4.5.3. Watering of All Plants

After planting of all plants are to be thoroughly watered using enough water to soak the ground all around the rootball. After the water has percolated away leaving the surface relatively dry the soil is to be lightly cultivated to give an even soil tilth.

#### 1.4.5.4. Mulching

After completion of planting, watering and light cultivation operations, a 50mm deep layer of approved mulch shall be spread over all planting areas except turf and groundcover beds. Mulching is to be done within 2 days of completing planting and watering in. The cost of mulching is cleared to be included in the unit rates for planting.

#### 1.4.5.5. Fertilizing

After planting and before the commencement of maintenance operations all planting areas will be fertilized at three month intervals. Planting beds and pits shall be fertilized with an approved slow release fertilizer at the rate of:

Trees	:	250gm per tree
Shrubs/Climbers	:	50gm per plant or 50gms/m <sup>2</sup>
Groundcover	:	50gm per square meter
Herbaceous/Rooted shoots	:	spread around the base of the plants

Turf areas shall receive area 46.0.0 at a rate of 1kg/100m<sup>2</sup>. All fertilized areas are to be watered immediately after fertilizer application.

#### 1.4.5.6. Disease Control

The Landscape Contractor shall take all necessary precautions to prevent or eradicate any outbreak of disease or insect attack.

#### 1.4.5.7. Protection Of Planted Areas

The Contractor shall be responsible for protecting all planted areas. If it is necessary for the Contractor to erect temporary protective fencing, the Contractor shall be responsible for keeping the fencing in position and in good repair until the end of the maintenance period. Fencing proposals shall be submitted to the Landscape Architect for approval.

#### 1.4.5.8. Maintenance Prior To Completion

- i. After planting and prior to the onset of the maintenance period, the Landscape Contractor shall be responsible for carrying out all necessary measures to ensure that the plant material thrives and becomes established and that the landscape areas are kept in a clean and tidy condition.
- ii. The Contractor shall allow for carrying out the following maintenance operations when necessary prior to the onset of the maintenance period, all as specified in section 7 of this specification.
  - Replacement of dead/missing plants
  - Grass cutting
  - Watering
  - Cultivation and loosening of soil
  - Weeding
  - Pruning and clipping
  - Firming up and adjustment stakes and ties
  - Eradication of pest or insect attack
  - Top drawing and mulching
  - Fertilizing
- iii. The Contractor shall be responsible for replacing any plants which fail to survive as a result of inadequate maintenance operations, poor workmanship or poor quality of plant material prior to completion
- iv. The Certificate of completion will not be issued until all plants scheduled on the Drawings and Schedule of Works are installed in a healthy condition in the manner specified.

### 1.5. STREET SCAPING

#### 1.5.1. Bench

The 4 seater bench with or without back rest shall be manufactured using stainless steel 304/316 grade matt finished as per design. Stainless Steel sheet/plates shall be of 16 gauge, round pipe shall be of 50/25 dia and 2mm thickness, square pipe shall be of size 50mmx50mm and 2mm thickness, rectangle pipe shall be of 25mmx50mm and 2mm thickness, base plate shall be 8mm thick and stainless steel fastener shall be of 10mmx100mm. The punching/perforation in seating plate and back rest shall be done by turret punching machines as per approved sample for punching pattern. All fabrication work shall be done on roller machine by CNC laser cutting and argon welding. The Argon welding shall be done by TIG (Tungsten inert gas) Arc welding method as per IS: 9604. Joints shall be welded under controlled condition to avoid formation of crack and metal flow at welding point by using tungsten electrodes as per IS: 13907 and SS304/SS304L/SS316 grade filler material. Welds should be treated with K-2 solution. All the joints shall be finished and polished using automatic polishing machine to match with parent material as per detail drawing.

#### 1.5.2. Concrete/ Wall Bench



Concrete Bench Shall as per Approved Drawings. Sitting platform size - 1800 mm length X 450mm width X 50 mm Leg size - 400mm Height X 450mm Width X 150mm .Sitting height is 450 mm (overall) It has to accommodate 3-4 persons comfortably It shall be placed on footpath in a way that the pedestrians pass-by without disturbing the user Materials All components are manufactured using M-30 grade of Concrete using vibro compaction process. All parts shall be joined together with galvanized nuts & bolts of suitable size and all bolts are sealed after assembly.

#### **1.5.3. Bollards**

Bollards shall be installed at pedestrian crossing. The bollards are of concrete/cast iron / steel etc & shall serve the purpose of defining the edge of the road and guide pedestrians. Concrete Bollards of M-30 grade, by vibro compaction method using FRP/steel. The Foundation slab shall be made in min. M25 concrete. The bollards shall not be fragile and safely secured to its foundation. All bollards shall be of uniform shape, size, colour on the same width of the road. Overall Dimensions: 918 mm Height X 300 mm Dia. Suitable reinforced to promote long life and to prevent damage during handling, transportation, & erection moulds, so as to achieve shuttering finish.

#### **1.5.4. Tree Grate**

The Overall dimensions 1800mm x1800mm x 40/100mm thickness. Suitably reinforced for long use and to prevent damage during transportation & handling .Manufactured with M-30 grade of concrete using vibro-compaction process using joint less FRP moulds so as to achieve shuttering finish on five faces and gurmala finish on the top surface. A choice of standard colours and unlimited custom colours will match any natural stone finish or interlock pavers in the surrounding. The top surface of the tree grates shall be polished.



## Section VI. General Conditions (GC)



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

## Section VI. General Conditions (GC)

1.	DEFINITIONS AND INTERPRETATION.....	212
2.	THE EMPLOYER.....	221
3.	THE ENGINEER.....	223
4.	THE CONTRACTOR .....	225
5.	DESIGN.....	242
6.	STAFF AND LABOUR .....	247
7.	QUALITY CONTROL.....	250
8.	TIME MANAGEMENT.....	254
9.	EMPLOYER'S TAKING OVER.....	258
10.	DEFECTS LIABILITY .....	259
11.	CONTRACT PRICE AND PAYMENT .....	262
12.	VARIATIONS.....	269
13.	TERMINATION OF THE CONTRACT.....	273
14.	RISK AND RESPONSIBILITY .....	278
15.	INSURANCE .....	280
16.	FORCE MAJEURE.....	282
17.	CLAIMS, DISPUTES, CONCILIATION AND ARBITRATION .....	285
18.	SERVICE OF NOTICES .....	288

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

## Section VI. General Conditions (GC)

### General Conditions

1. DEFINITIONS AND INTERPRETATION		
<b>1.1</b>	Definitions	In the contract (as defined below) the words and expressions defined below shall have the meanings assigned to them, except where the Context requires otherwise. Words indicating persons or parties include corporations and other legal entities except where the context requires otherwise.
1.1.1	Documents	
	1.1.1.1	<b>"Appendix to Form of Tender"</b> means the completed pages in title Appendix, which are appended to and form part of the Tender.
	1.1.1.2	<b>"Bill of Quantity"</b> means a document containing various items of payment and contains schedule of Payment also.
	1.1.1.3	<b>"Construction and/or Manufacture Documents"</b> means all drawings, calculations, computer software (programs), samples, patterns, models, operation and maintenance manuals and other manuals and information of a similar nature, to be submitted by the Contractor.
	1.1.1.4	<b>"Contract"</b> means the Contract Agreement, the Letter of Acceptance, the letter of tender, General Conditions of Contract, Special Conditions of Contract, the Employer's Requirements, the Tender, the Notice Inviting Tender, Instructions To Tenderers, the Contractor's Proposal, the Schedules, and such further documents which are listed in the Letter of Acceptance or Contract Agreement (if completed).
	1.1.1.5	<b>"Contract Agreement"</b> means the contract agreement referred to in Sub-Clause 1.4. It shall also include all subsequent modifications/amendments to the Contract as a result of the communications between the parties and executed in writing.
	1.1.1.6	<b>"Contractor's Proposal"</b> means the proposal submitted by the Contractor with the Tender, as modified and accepted by the Employer and included in the Contract. Such documents may include the Contractor's preliminary design.
	1.1.1.7	<b>"Contractor's Document"</b> means the calculations, computer programme and other software, drawings, manuals and other documents of a technical nature (if any) supplied by the Contractor under the Contract.
	1.1.1.8	<b>"Design Data"</b> means all specifications, plans, drawings, details, graphs, sketches, models, levels, setting-out dimensions,

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

		calculations duly checked by the Contractor and other documents relating to the design of the Works prepared or to be prepared by or on behalf of the Contractor.
	1.1.1.9	<b>"Drawings"</b> means the Employer's Drawings and the Drawings submitted by the Contractor and any modification of such drawings as any, from time to time, be furnished or for which the Engineer has issued a Notice of No Objection.
	1.1.1.10	<b>"Employer's Requirements"</b> means the description of the scope, standard, design criteria, specifications, drawings, programme of work, indigenisation programme (where applicable) as included in the Contract, and any alterations and modifications thereto in accordance with the Contract.
	1.1.1.11	<b>"Interim Payment Schedule"</b> means the schedule included for each Cost Centre in the Pricing Document and accepted by the Employer to be used for interim payments in relation to achievement of milestones under that Cost Centre, as the same may be revised from time to time in accordance with Clause 11.
	1.1.1.12	<b>"Letter of Acceptance"</b> means the formal acceptance to work by the Employer of the Tender.
	1.1.1.13	<b>"Notice to Proceed"</b> means the notice issued by the Employer to the Contractor communicating the date on which the Works are to be commenced.
	1.1.1.14	<b>"Letter of Tender"</b> means the document entitled letter of tender, which was completed by the Contractor and includes the signed offer to the Employer for the Works.
	1.1.1.15	<b>"Safety, Health and Environmental (SHE) Manual"</b> means the Employer's manual containing the requirements and conditions to be met during the execution of the Works by the Contractor.
	1.1.1.16	<b>"Schedules"</b> means the information and data submitted with the Tender, as included in the Contract.
	1.1.1.17	<b>"Tender"</b> means the Contractor's priced offer to the Employer for the designing where ever applicable, execution, manufacture, and completion of the whole of Works, testing and commissioning (including Integrated Testing and Commissioning where ever applicable) and remedying of any defects therein, as accepted by the Letter of Acceptance
	1.1.1.18	<b>"Schedule of Milestones"</b> means the schedule included in each Cost Centre in the Pricing Document, describing the Milestones and stipulating dates by which the Milestones are to be achieved under that Cost Centre in order to maintain interim payments by the Employer to the Contractor in accordance with the Interim Payment Schedule for that Cost Centre, as the same may be revised from time to time in accordance with the Contract.
	1.1.1.19	<b>"Schedule of Payment"</b> means the schedule included in the Bill of Quantity for payment in various stages on part of the works.
	1.1.1.20	<b>"Special Conditions of Contract"</b> means any special conditions of contract issued by the

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

		Employer prior to submission of the Tender or negotiated and agreed in writing by the Employer and the Contractor prior to and conditional upon acceptance of the Tender.
	1.1.1.21	<p><b>"Works Programme"</b> means the programme showing the sequence, method and timing of investigations, design, issue of No Objection Notices, execution, manufacture, delivery to site, erection, installation, testing, commissioning of the Works (including Integrated Testing and Commissioning), indigenisation (where applicable) and related activities in the form and content prescribed by the Employer's Requirements, or any amended or varied version thereof, as submitted by the Contractor and for which the Engineer has issued a Notice of No Objection.</p>
1.1.2 Persons		
	1.1.2.1	<p><b>"Party"</b> means the Employer or the Contractor as the context requires</p>
	1.1.2.2	<p><b>"Tenderer or Bidder"</b> means the person submitting a bid/Tender.</p>
	1.1.2.3	<p><b>"Contractor"</b> means the person whose Tender has been accepted by the Employer and the legal successors in title to such person, but not (except with the consent of the Employer) any assignee of such person.</p>
	1.1.2.4	<p><b>"Contractor's Representative"</b> shall mean a person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-clause 4.3 to act on behalf of Contractor.</p>
	1.1.2.5	<p><b>"Designated Contractors"</b> means any of the following whose activities or the works they are engaged to carry out, affect or are affected by the Works, in any way or at any time:</p> <ul style="list-style-type: none"> <li>(a) contractors, design consultants and utility authorities engaged on the Project from time to time by the Employer;</li> <li>(b) sub-contractors of any tier of the contractors above; provided that the definition shall exclude the Contractor and his sub-contractors of any tier in relation to the Works.</li> </ul>
	1.1.2.6	<p><b>"Other Contractor"</b> means a person employed by or having Contract directly or indirectly with the Employer otherwise than through the Contractor.</p>
	1.1.2.7	<p><b>"Designer"</b> means the Contractor, or part of the group forming the contractor, person, firm or company or group of companies, or any replacement, carrying out the Design of Works or part thereof.</p>
	1.1.2.8	<p><b>"Employer"</b> means Managing Director, Cochin Smart Mission Ltd (CSML), Cochin, its legal successors and assignees.</p>
	1.1.2.9	<p><b>"Engineer"</b> means any person nominated or appointed from time to time by the Employer to act as the Engineer for the purposes of the Contract and notified as such in writing to the Contractor.</p>
	1.1.2.10	<p><b>"Engineer's Representative"</b></p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

		means any Assistant of the Engineer appointed from time to time by the Engineer under Sub-clause 3.3
	1.1.2.11	<b>"Sub-contractor"</b> means any person named in the Contract as a sub-contractor, manufacturer or supplier for a part of the Works or any person to whom a part of the Works has been sub-contracted with the consent of the Employer and the legal successors in title to such person, but not any assignee of such person.
1.1.3 Dates, Times and Periods		
	1.1.3.1	<b>"Commencement Date"</b> means the date on which the Contractor shall commence the Works on the written instructions of the Employer contained in the Notice to Proceed.
	1.1.3.2	<b>"Contract Period"</b> means the period from the Commencement Date to the end of Defects Liability Period including Integrated Testing and Commissioning and as certified by the Engineer under Clause 7.11 (or as extended under Sub-Clause 10.3).
	1.1.3.3	<b>"Day"</b> means a calendar day, <b>"Week"</b> means 7 calendar days, "Month" means a calendar month and "Year" means 365 days.
	1.1.3.4	<b>"Effective Date"</b> means the date on which the Contract comes into force and effect.
	1.1.3.5	<b>"Gazetted Holiday"</b> means every holiday which is observed by Cochin Smart Mission Limited as a gazetted holiday as well as a weekly holiday.
	1.1.3.6	<b>"General Holiday"</b> means Sunday.
	1.1.3.7	<b>"Key Date"</b> means a date identified as such in the Contract.
	1.1.3.8	<b>"Milestone"</b> means the completion of a part of the Works or the occurrence of an event identified as such in the Schedule of Milestones.
	1.1.3.9	<b>"Milestone Date"</b> means the date prescribed in the Schedule of Milestone by which a Milestone is to be achieved, if Interim Payments for the Cost Centre in which the Milestone is included are not to be suspended.
	1.1.3.10	<b>"Stage"</b> means level of progress of the works identified as such and more particularly described in the Employer's Requirements for which a Key Date for the achievement thereof is stipulated in the Contract.

Contractor

Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	1.1.3.11	<p><b>“Time for Completion”</b> means the time for completing the Works or a section or a part thereof (as the case may be), and passing the Tests on Completion, including Integrated Testing and Commissioning, as stated in the contract, calculated from the Commencement Date.</p>
1.1.4 Tests and Completion		
	1.1.4.1	<p><b>“Factory Tests”</b> means the tests required to be carried out in the factory premises on components, equipment, subsystem, system, etc. during and/or after manufacture in the factory.</p>
	1.1.4.2	<p><b>“Integrated Testing”</b> in the contracts where applicable means the programme of tests performed by the Contractor at the direction of the Engineer following satisfactory completion of Contractor's tests on his equipment, sub-systems or system to verify and confirm the compatibility and compliant performance of his equipment/ sub-system/ system with the equipment/ sub-system/ system provided by others.</p>
	1.1.4.3	<p><b>“Milestone Certificate”</b> means the certificate to be issued by the Engineer in relation to the achievement or otherwise of Milestones.</p>
	1.1.4.4	<p><b>“Performance Certificate”</b> means the certificate issued by the Engineer under Sub-Clause 10.9.</p>
	1.1.4.5	<p><b>“Taking Over Certificate”</b> means a certificate issued under Clause 9.1.</p>
	1.1.4.6	<p><b>“Tests on Completion”</b> means the tests specified in the Contract and designated as such, including Integrated Testing where applicable and any other such tests as may be agreed by the Engineer and the Contractor, or instructed as a Variation, which are to be carried out before the Works, or any Section are taken over by the Employer.</p>
1.1.5 Money and Payments		
	1.1.5.1	<p><b>“Contract Price”</b> means the sum stated in the Letter of Acceptance as payable to the Contractor, subject to such additions thereto or deductions therefrom as may be made under the provisions of the Contract,</p>
	1.1.5.2	<p><b>“Cost”</b> means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site,</p>
	1.1.5.3	<p><b>“Cost Centre Amount”</b> means the amount apportioned to a Cost Centre as set out in the Pricing Document, as the same may be revised from time to time in accordance with the Contract.</p>
	1.1.5.4	<p><b>“Final Payment Certificate”</b> means the payment certificate issued by the Engineer under Sub-Clause 11.9.</p>
	1.1.5.5	<p><b>“Final Statement”</b> means the agreed statement defined in Sub-Clause 11.10.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	1.1.5.6	<b>"Foreign Currency"</b> means a freely convertible international trading currency in which part of the Contract Price is payable, but not the Local Currency.
	1.1.5.7	<b>"Interim Payment Certificate"</b> means any payment certificate issued by the Engineer under Sub-Clause 11.5, other than the Final Payment Certificate.
	1.1.5.8	<b>"Local Currency"</b> means Indian Rupees.
1.1.6 Other Definitions		
	1.1.6.1	<b>"Approval or Approved"</b> means Approval in writing including subsequent written confirmation of previous verbal approval.
	1.1.6.2	<b>"Contractor's Equipment"</b> means all machinery, apparatus, appliances, other things of whatsoever nature required for purpose of the Contract, including without limitation, Contractor's Plant and Equipment, or Materials to or from the Site, but does not include Plant, or Materials intended to form or forming part of the Permanent Works.
	1.1.6.3	<b>"Cost Centre"</b> means a group of activities and/ or items of work identified as such in the Pricing Document.
	1.1.6.4	<b>"Materials"</b> means things of all kinds (other than Plant) to be provided and incorporated in the Permanent Works by the Contractor, including the supply-only items (if any), which are to be supplied by the Contractor as specified in the Contract.
	1.1.6.5	<b>"Plant"</b> means the machinery, equipment, and apparatus and the likes, intended to form or forming part of the Permanent Works, including the supply-only items (if any), which are to be supplied by the Contractor as specified in the Contract.
	1.1.6.6	<b>"Section"</b> means a part of the Works specifically designated in the Appendix to Form of Tender as a Section (if any).
	1.1.6.7	<b>"Site"</b> means the places provided by the Employer where the Works are to be executed and to which Plant and Materials are to be delivered, and any other place as may be specifically designated in the Contract as forming part of the Site.
	1.1.6.8	<b>"Scheduled Bank"</b> means a bank included in the second schedule to the Reserve Bank of India Act, 1934, or modifications thereto.
	1.1.6.9	<b>"Specification"</b> means the Specification referred to in the contract and any modification thereof or addition thereto, as may from time to time be furnished or approved in writing by the Engineer.
	1.1.6.10	<b>"Test"</b> means such Tests as are prescribed in the Specifications or by the Engineer or Engineer's Representative, whether performed by the Contractor or by the Engineer or his Representative or any agency acting under the direction of the Engineer.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	1.1.6.11	<b>"Variation"</b> means any alteration and/ or modification to the Employer's Requirements, which is instructed by the Engineer or approved as a variation by the Engineer, in accordance with Clause 12.
	1.1.6.12	<b>"Works"</b> means the work, both permanent and temporary, or services to be carried out, designed, manufactured, fabricated, delivered to Site, erected, installed, completed, tested, commissioned, (including Integrated Testing and Commissioning) and remedying of any defects, and/ or supplied in accordance with the Contract and include Plant, Materials and their accessories.
	1.1.6.13	<b>"Permanent Works"</b> means the permanent works to be designed and executed in accordance with the Contract.
	1.1.6.14	<b>"Temporary Works"</b> means all temporary works of every kind (other than Contractor's Equipment) required for the execution and completion of the Works, and the remedying of any defects.
	1.1.6.15	<b>"Project"</b> means Cochin Smart City Projects
<b>1.2 Interpretation</b>		
In the Contract except where the context requires otherwise:		
1.2.1		(a) words indicating one gender include all genders;  (b) words indicating the singular also include the plural and words indicating the plural also include the singular and  (c) "written" or " in writing" means hand-written, type written, printed or electronically made and resulting in a permanent record.  The marginal words and other headings shall not be taken into consideration in the interpretation of these condition.
1.2.2		Terms and expressions not herein defined" shall have the meanings assigned to them in the "Indian General Clauses Act, 1897" or the Indian Contract Act or the Indian Sale of Goods Act or any other applicable Indian Law, as the case may be.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>1.3</b>	<b>Law and Language</b> The contract shall be governed by the Act and Laws of India, the rules, regulations and bye-laws of the concerned public bodies and authorities. Language of the Contract shall be English.
<b>1.4</b>	<b>Contract Agreement</b> The Employer and the Contractor shall execute a Contract Agreement, with such modifications as may be necessary to record the Contract. The costs of stamp duties and similar charges imposed by law shall be borne by the Contractor. The value of stamp paper shall be calculated according to the Kerala Stamp Act 1959 i.e. "One rupee for every Rs 1000 or part thereof on the amount agreed in the contract, subject to a minimum of rupees 200 and a maximum of rupees one lakh."
<b>1.5</b>	<b>Priority of Documents</b> The documents forming the Contract are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the documents, the Engineer shall issue any necessary clarification or instruction to the Contractor, and the priority of the documents shall be as follows: <ul style="list-style-type: none"><li>(a) The Contract Agreement;</li><li>(b) The Letter of Acceptance;</li><li>(c) Pre and Post bid proceedings</li><li>(d) Form of Tender</li><li>(e) BOQ/Payment schedule</li><li>(f) NIT</li><li>(g) ITT</li><li>(h) The Outline Design Specifications (Design Criteria) and Outline Construction Specifications; or any other specification</li><li>(i) Drawings</li><li>(j) The Employer's Requirements</li><li>(k) The Special Conditions of Contract;</li><li>(l) The General Conditions of Contract;</li><li>(m) The Contractor's Proposal; and</li><li>(n) Any other document forming part of the Contract.</li></ul>
<b>1.6</b>	<b>Care and Supply of Construction and/or Manufacture Documents</b> The Construction and/or Manufacture Documents shall be in the custody and care of the Contractor during the Contract. Unless otherwise stated in the Employer's Requirements, the Contractor shall provide three copies for the use of the Engineer and assistants (as referred to in Sub-Clause 5.3). The Contractor shall keep on Site one complete set of the documents forming the Contract, the Construction and/or Manufacture Documents, Variations, other communications given or issued from time to time and the documents/samples mentioned in Sub-Clause 5.3. The Employer, the Engineer and their assistants (as referred to in Sub-Clause 3.3) shall have the right to access these documents at all reasonable times. On discovery of any technical error or defect in a document intended to be used for the purpose of Contract, the Contractor shall promptly give notice to the Engineer of such error or defect.
<b>1.7</b>	<b>Communications</b> Communications between parties, unless otherwise specified shall be effective only when made in writing. A notice will be effective only when delivered.
<b>1.8</b>	<b>Employer's Use of Contractor's Documents</b> As between the Parties, the Contractor shall retain the copyright and other intellectual property

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.

The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:

- (a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
- (b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
- (c) in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>1.9</b>	<b>Contractor's Use of Employer's Documents</b> As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Employer's Requirements and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.
<b>1.10</b>	<b>Compliance with Statutes, Regulations and Laws</b> The Contractor shall familiarize themselves and conform in all aspects with: (a) the provision of any enactment in India as applicable from time to time (b) the regulations or bye-laws of any local body and utilities. (c) The Contractor shall be bound to give all notices required by statute, regulations or by-laws, as aforesaid and to pay all fees and bills payable in respect thereof. The Contractor will arrange necessary clearances and approvals before the Work is taken up.  Ignorance of Rules, Regulations and Byelaws shall not constitute a basis for any claim at any stage of work.  The Contractor shall indemnify the Employer against all penalties and liabilities of every kind of breach of any such enactment, laws, regulations, bye-laws or rules.
<b>1.11</b>	<b>Joint and Several Liability</b> If the Contractor is (under applicable Laws) a joint venture, consortium, or other incorporated grouping of two or more Persons:  (a) these Persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;  (b) these Persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and  (c) the Contractor shall not alter its composition or legal status without the prior consent of the Employer
<b>2. THE EMPLOYER</b>	
<b>2.1</b>	<b>General Obligations</b> The Employer shall provide the Site/area of works and shall pay the Contractor in accordance with the Contract.
<b>2.2</b>	<b>Access to and possession of the site</b> The Employer shall grant the Contractor right of access to, and / or possession of, the Site progressively for the completion of Works. Such right and possession may not be exclusive to the Contractor. The Contractor will draw/modify the schedule for completion of Works according to progressive possession/right of such sites.  If the Contractor suffers delay from failure on the part of the Employer to grant right of access to,

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

or possession of the Site, the Contractor shall give notice to the Engineer in a period of 28 days of such occurrence. After receipt of such notice the Engineer shall proceed to determine any extension of time to which the Contractor is entitled and shall notify the Contractor accordingly. For any such delay in handing over of site, Contractors will be entitled to only reasonable extension of time and no monetary claims whatsoever shall be paid or entertained on this account.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**2.3** Permits, Licenses or Approvals  
It shall be Contractor's exclusive responsibility to get approvals, permits or license required for the Contract. However, the Employer may (where he is in a position to do so) provide reasonable assistance to Contractor at the request and cost of the Contractor in getting Permits, License or Approvals required during the Contract.  
The rendering of such assistance by the Employer shall not be interpreted as a pretext by the Contractor as condoning of any delay or non-performance of any of the Contractors obligations. The following-up of all such applications shall be the responsibility of the Contractor.

**2.4** Assignment by the Employer  
The Employer shall be fully entitled without the consent of the Contractor, to assign the benefit of the part thereof and any interest therein or there under to any third party.

### 3. THE ENGINEER

**3.1** Appointment of Engineer  
The Employer shall notify the Contractor in writing of the appointment and identity of the Engineer and of any replacement from time to time.

**3.2** Duties and Authorities of the Engineer  
The Engineer shall carry out the duties specified in the Contract. The Engineer shall have no authority to amend the Contract.  
The Engineer may exercise the authority specified in, or necessarily to be implied from the Contract. If the Engineer is required to obtain the specific approval of the Employer before exercising such authority, such requirements shall be as stated in Special Conditions of Contract. Any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.  
The Engineer shall have no authority to relieve the Contractor of any of his duties, obligations, or responsibilities under the Contract. Any proposal, inspection, examination, testing, consent, approval or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility, including responsibility for his errors, omissions, discrepancies, and non-compliance with Sub-Clause 5.4.  
The Engineer shall copy to the Employer all communications given or received by him in accordance with the Contract.

**3.3** Engineer's Authority to Delegate

- i) The Engineer, may from time to time assign and delegate authority to Engineer's representatives/assistants and may also revoke such assignments and delegations. The delegation or revocation shall be in writing and shall be applicable only after same has been notified in writing to the Contractor.
- ii) Each Assistant to whom duties have been assigned or authority has been delegated shall be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any determination, approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test or similar act by an assistant shall have the same effect as though the act had been an act of the Engineer. However:

Contractor

Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (a) Any failure to disapprove any Plant, Goods, Material, design and workmanship shall not prejudice the right of the Engineer to reject such Plant, Goods, Material, design and workmanship;
- (b) if the Contractor questions any determination or instruction of an assistant of the Engineer, the Contractor may refer the matter to the Engineer within three days of such decision having been given, who shall confirm, reverse or vary such determination or instruction.

- 3.4**      Engineer's Instructions
- The Contractor shall comply with instructions given by the Engineer in accordance with the Contract.
- The Contractor shall give reasonable notice to the Engineer of any instruction, which he considers necessary for the execution of the Works, to enable the Engineer to issue the instruction so that progress of the Works is not delayed. The Engineer shall not, however, be bound to issue any instruction which, in his opinion, is unnecessary.
- No act or omission by the Engineer or the assistants to the Engineer in the performance of any of the Engineer's duties or the exercise of any of the Engineer's powers under the Contract shall, in any way, operate to relieve the Contractor of any of the duties, responsibilities, obligations or liabilities imposed upon the Contractor by any of the provisions of the Contract.
- 3.5**      Engineer to Attempt Agreement
- When the Engineer is required to determine value, cost or extension of time, he shall consult with the Contractor and the Employer in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall determine the matter fairly, reasonably and in accordance with the Contract, with the approval of Employer

**4. THE CONTRACTOR**

- 4.1**      General Obligations
- The Works as completed by the Contractor shall be wholly in accordance with the Contract and fit for the purposes for which they are intended, as defined in the Contract. The Works shall include any work which is necessary to satisfy the Employer's Requirements, the Contractor's Proposal and Schedules, or is implied by the Contract, or arises from any obligation of the Contractor, and all works not mentioned in the Contract but which may be inferred to be necessary for stability, or completion, or the safe, reliable and efficient operation of the Works.
- The Contractor shall design, if in the scope of work, manufacture, execute, install, complete, test (including Integrated Testing in case of rolling stock and signalling contracts) and commission, the Works, including providing Construction and/or Manufacture Documents, within the Time for Completion and shall remedy any defects within the Contract Period. The Contractor shall provide all superintendence, labour, Plant, Materials, Contractor's Equipment, Temporary Works and all other things, whether of a temporary or permanent nature, required in and for such design, works and remedying of defects.
- Before commencing design, if in the scope of the contract, the Contractor shall satisfy himself regarding the Employer's Requirements (including design criteria and calculations, if any) and the items of reference mentioned in Sub-Clause 4.8.
- The Contractor shall give notice to the Engineer of any error, fault or other defect in the Employer's Requirements or such items of reference. After receipt of such notice, the Engineer shall determine whether Clause 12 shall be applied, and shall notify the Contractor accordingly.

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations, of all methods of construction, manufacture, and of all the Works, irrespective of any approval or consent by the Engineer.

The Contractor shall be deemed to have satisfied himself before submitting his tender as to the correctness and sufficiency of his Tender to cover all his risks, liabilities and obligations set out in or implied by the Contract and all matters and things necessary for the proper design, manufacture, execution, installation, completion, testing, Integrated Testing whichever is in the scope of the contract, commissioning of the Works and remedying of the Defects.

The Contractor acknowledges responsibility for ascertaining and securing at his own cost:

- (a) conditions bearing upon the proper transportation, disposal, handling and storage of materials (including but not limited to hazardous toxic substances and excavated materials);
- (b) availability of electricity, water and gas;
- (c) availability of skilled manpower;
- (d) the character of equipment and facilities needed preliminary to and during the manufacture, installation, execution, testing, Integrated Testing, and commissioning of the Works and remedying of any defects;
- (e) the protection of the environment and adjacent structures which will be necessary preliminary to and during the manufacture, installation, execution, testing, Integrated Testing, and commissioning of the Works and remedying of any defects;
- (f) the location of and the authorisation required for and the means of diversion of any services and facilities required for the purposes of the Works.

The Contractor shall whenever require by the Engineer, submit details of the arrangement and methods which the Contractor proposed to adopt for the execution of the Works. No alteration to these arrangements or methods shall be made without the approval of the Engineer.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.2 Performance security	
4.2.1 Performance security Amount	<p>i) Within 28 days of receipt of the Letter of Acceptance, the successful Tenderer shall furnish Performance Security in the form of a bank guarantee from a branch in India of a scheduled foreign bank or from a scheduled commercial bank in India acceptable to the Employer for an amount of ten per cent of the Contract value in types and proportions of currencies in which the Contract Price is payable. The approved form provided in the 'Instructions to Tenderers' documents or any other form approved by the Employer shall be used for Bank Guarantee. The Bank Guarantee shall be valid up to 3 months beyond the Defect Liability Period. In case the contract value exceeds beyond 25% of the original contract value, the contractor shall have to submit additional performance security.</p> <p>ii) Whenever the contract value exceeds beyond 25% of the original contract value either due to employer's variation or due to contractor's variation, the contractor shall submit additional performance security equal to an amount of 10% of the variation reduced by an amount equal to 5% of the work already certified as completed by the Engineer-in-Charge on the date of variation subject to a maximum limit of 10% of the variation amount.</p> <p>iii) No additional performance security will be required to be submitted if the variation is within 25% of the original contract value</p>
4.2.2 Forfeiture	<p>Failure of the successful Tenderer to furnish the required Performance Security shall be a ground for the annulment of the award of Contract and forfeiture of the tender security.</p>
4.2.3 Release	<p>The whole of the Performance Security amount shall be liable to be forfeited by the Employer at the discretion of the Employer, in the event of any breach of contract on the part of the Contractor.</p> <p>i) On completion of the entire work, one half of the Performance Security shall be refunded to the Contractor, on issue of Taking over Certificate by the Engineer, in accordance with Sub-Clause 9.1 and 9.2 of these conditions. This shall not relieve the Contractor from his obligations and liabilities, to make good that may be detected during the Defects Liability Period</p> <p>ii) The balance amount shall become due and shall be paid to the Contractor on signing of the Performance Certificate after the expiry of the final Defects Liability Period as per Clause 10.9 of these conditions.</p>
4.2.4 Guarantees and Warranties	<p>Within 21 days of the date of Letter of Acceptance of the Tender, the Contractor shall submit to the Employer:</p> <p>(a) An Undertaking in the approved format from a parent company, the identity of which shall have been submitted</p>

Contractor

Procuring Entity / Employer

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

	<p>in writing to the Employer prior to acceptance of the Tender and against which the Employer shall have raised no objection.</p> <p>(b) A written Guarantee in the approved format from a parent company, the identity of which shall have been submitted in writing to the Employer prior to acceptance of the Tender and against which the Employer shall have raised no objection.</p> <p>(c) A warranty in the approved format from the Contractor. In the event that the Contractor shall comprise two or more members, corporations acting in partnership, joint venture, consortium or otherwise each such member or corporation shall submit a parent company Undertaking and Guarantee.</p> <p>Notwithstanding any other provision of the Contract:</p> <p>(a) submission by the Contractor of the requisite Performance security, parent company Undertakings and written Guarantees shall be condition precedent to the Contractor's entitlement to any payment, under the Contract; and</p> <p>(b) failure by the Contractor to provide a Performance security or parent company Undertakings or parent company Guarantees shall entitle the Employer either to suspend the Works or to terminate the Contract forthwith by notice in writing to that effect, notwithstanding that the Contractor may have been permitted to proceed with the Works, and the Contractor shall not be entitled to any compensation whatsoever as a consequence of such suspension or termination.</p>
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**Contractor**

**Procuring Entity / Employer**

4.3 Representation on Works

Unless the Contractor's Representative is named in the Contract, the Contractor shall, within 14 days of Notice to Proceed, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint. The Contractor shall not revoke the appointment of the Contractor's Representative without the prior consent of the Engineer. The Contractor's Representative so nominated shall have full authority to act on behalf of the Contractor. The Contractor's Representative shall give his whole time to directing the preparation of the Construction and/or Manufacture Documents and the execution of the Works. The Contractor's Representative shall receive (on behalf of the Contractor) all notices, instructions, consents, no objection certificate approvals, certificates, determinations and other communications under the Contract. Whenever the Contractor's Representative is to be absent from the Site, a suitable replacement person shall be appointed, with prior consent of Engineer.

Failure on part of the Contractor to comply with these provisions shall constitute a breach of Contract leading to action under Sub-Clause 13.2

The Contractor's Representative may delegate any of his powers, functions and authorities to any competent person, and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing and shall not take effect until the Engineer has given prior consent thereto. The Contractor's Representative and such persons shall be fluent in the language of day to day communication and the Contractor shall be bound by and fully liable for the acts or omissions of the Contractor's Representatives or any of his employees and/or delegates, agents or nominees.

4.4 Facilities for and co-ordination with Others

The Contractor shall not impede and shall afford all necessary facilities, access and/or services to the Employer, Engineer, Designated Contractors, utility undertakings, other relevant authorities and other contractors (whether employed by the Employer or not) who are carrying out on, or in the vicinity of, the Site, works not included in the Contract but forming part of the Project:

- (a) The Contractor shall take all reasonable steps to ensure that the Works are co-ordinated and integrated with the design, manufacture, installation execution and testing of such other works and shall in particular (but without limitation):
  - i) comply with any direction which the Engineer may give for the integration of the design of the Works with the design of any other part of the Project;
  - ii) consult, liaise and co-operate with those responsible for carrying out such other works, including where necessary, in the preparation of the respective designs, the preparation of co-ordinated programmes, method statements, co-ordination drawings and specifications together with arrangements of service priorities and zoning;
  - iii) participate in Integrated Testing and Commissioning of the system with Designated Contractors and demonstrate to the satisfaction of the Engineer that the Works have been designed and constructed in a manner compatible with the works of Designated Contractors.
- (b) The Contractor shall undertake design co-ordination with other contractors who are carrying out works forming part of the Project as described in the Employer's Requirements. At the end of each such co-ordination period, the Contractor and the other contractor with whose

works the interface period refers shall jointly state in writing that their design co-ordination activities are complete and that their respective designs are integrated and can be finalised without interference with each other's designs or the designs with which their designs have already been integrated. A copy of this joint written statement shall be provided to the Engineer within 7 days of the end of the said design co-ordination period. Unless and until copies of all relevant and necessary design co-ordination statements have been submitted to the Engineer, the Engineer shall be entitled to suspend any review or further review of the Contractor's or the other contractor's design submissions. Such suspension shall not be grounds for the Contractor to claim nor shall be entitled to receive an extension of time or additional payments.

- (c) Any other contract which depends for its execution on the Contract or upon which the Contract is dependent for its own execution shall be identified by the Engineer as a "Designated Contract". The Contractor shall provide attendance on Designated Contractors in accordance with the Employer's Requirements and as instructed by the Engineer. The identity of the contractor for a Designated Contract may not be known before the execution of the Contract but this shall not be a ground for the Contractor to object to the subsequent appointment of a Designated Contractor.
- (d) The Contractor shall afford all reasonable opportunities, for carrying out their work, to other contractors employed by the Employer and their workmen respectively and the workmen of the Employer who may be engaged on or near the Site of any work, ancillary to the Works, but, not included in the Contract and shall not cause them inconvenience.
- (e) If the Contractor shall suffer delay by reason of failure by any Designated Contractor to meet the specified installation interfacing and co-ordination, completion dates, which delay shall be caused otherwise than by fault of the Contractor, or, if compliance with sub-clause (f) herein shall involve the Contractor in delay beyond that which could be reasonably foreseen by an experienced contractor at the time of tender, then the Engineer shall take such delay into account in determining any extension of time to which the Contractor is entitled under the Contract.
- (f) It shall be the responsibility of the Contractor to ensure that the full extent of the Works under the Contract and the works to be carried out by Designated Contractors within the Works or, in, on, under, through and over the Site are co-ordinated and integrated in their design, manufacture, installation and construction. Such responsibility shall neither be mitigated nor in any other way affected by virtue of similar responsibilities being placed on other contractors.

The Contractor shall be deemed to have made adequate allowance in the Contract Price and in the Works Programme in respect of these obligations.

If any act or omission of the Contractor whether directly or indirectly results in the delay in the execution of the works of a Designated Contractor, the Contractor, in addition to his liability in respect of liquidated damages if they become due, shall pay to the Employer, or the Engineer may deduct from Interim Payment Certificates such amount as the Engineer shall have certified in respect of additional payments or costs to the Designated Contractor in respect of such delay.

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.5	Sub-contractors
4.5.1	The Contractor shall not sub-contract any of the works.
4.5.2	<p>Unless otherwise stated in the Special Conditions of Contract:</p> <ul style="list-style-type: none"> <li>(a) the Contractor shall not be required to obtain consent for purchases of Materials which are in accordance with the makes specified in the Contract or provisions of labour or for the sub-contracts for which the Sub-contractor is named in the Contract;</li> <li>(b) the prior consent of the Engineer shall be obtained for other proposed Sub-contractors;</li> <li>(c) not less than 28 days before the intended date of each Sub-contractor commencing work, the Contractor shall notify the Engineer of such intention; and the Contractor shall give fair and reasonable opportunity for contractors in India to be appointed as Sub-contractors.</li> </ul>
4.6	<p><b>Assignment of Contractor's and Sub-contractor's Obligations</b></p> <p>The Contractor shall not assign a right or benefit under the Contract without first obtaining Employer's prior written consent, otherwise than by:</p> <ul style="list-style-type: none"> <li>(a) a charge in favour of the Contractor's bankers of any money due or to become due under the Contract, or</li> <li>(b) assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable.</li> </ul> <p>If a Subcontractor's obligations extend beyond the expiry date of Defects Liability Period then the Contractor shall assign the benefits of such obligations to the Employer.</p> <p>In the event that a sub-contractor of any tier provides to the Contractor or any other sub-contractor a warranty in respect of Plant, Materials or services supplied in connection with the Works, or undertakes a continuing obligation of any nature whatsoever in relation to such Plant, Materials or services (including without limitation an obligation to maintain stocks of spare parts) extending for a period exceeding that of the Defects Liability Period or where there is more than one Defects Liability. Period exceeding that of the latest Defects Liability Period, and if the Engineer so directs in writing within 21 days of the expiry of the Defects Liability Period or the latest Defects Liability Period (as the case may be), the Contractor shall immediately assign or obtain the assignment of the benefit of such warranty or obligation to the Employer or at the direction of the Employer, to any third party referred to in Sub-Clause 2.4.</p>
4.7	<p><b>Compensation for Breach</b></p> <p>Any breach of Sub-clauses 4.5 to 4.6 shall entitle the Employer to rescind the contract under Clause 13.2 of these conditions and also render the Contractor liable for loss or damage arising due to such cancellation.</p>
4.8	Setting Out
4.8.1	<p><b>Accurate Setting Out</b></p> <p>The Contractor shall be responsible for</p> <ul style="list-style-type: none"> <li>(a) the accurate setting out of the Works in relation to the original points, lines and levels of reference given by the</li> </ul>

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## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	<p>Engineer in writing</p> <ul style="list-style-type: none"><li>(b) the correctness of position, levels, dimensions and alignments of all parts of the Works</li><li>(c) the provisions of all necessary instruments, equipment, apparatus and labour in connection with the foregoing responsibilities</li><li>(d) Carefully protecting and preserving all bench marks, sight rails, pegs and other things used in setting out the Works</li></ul> <p>The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy or correctness thereof and the Contractor shall carefully protect and preserve all bench-marks, sight-rails, pegs and other things used in setting out the Works.</p>
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Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>4.8.2</b> Errors in Setting out	If at any time during the execution of the Work, an error appears in the positions, levels, dimensions or alignment of any part of the Works, the Contractor on being required to do so by the Engineer shall, at Contractor's cost, rectify such error to the satisfaction of the Engineer.
<b>4.9</b> Site Data	<p>i) The Employer shall have made available to the Contractor with the Tender documents such relevant data in Employer's possession on hydrological and sub-surface conditions. The accuracy or reliability of the data/studies/reports and of any other information supplied at any time by the Employer or Engineer is not warranted with respect to the viability of his design and execution of Works and the Contractor shall be responsible for interpreting all such data. The Contractor shall conduct further investigations considered necessary by him at his own cost and any error, discrepancies if found in Employer's data at any stage will not constitute ground for any claim for extra time and costs.</p> <p>ii) The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works.</p> <p>iii) The Contractor shall also be deemed to have inspected and examined the Site, its surroundings, the above data and other available information with respect to the viability of his design and execution of Works and to have satisfied himself before submitting the Tender, as to all the relevant matters including without limitation:</p> <ul style="list-style-type: none"><li>(a) the form and nature of the Site, including the sub-surface conditions;</li><li>(b) the hydrological and climatic conditions;</li><li>(c) the extent and nature of the work, Plant, and Materials necessary for the execution and completion of the Works and the remedying of any defects;</li><li>(d) the applicable laws, procedures and labour practices</li><li>(e) The Contractor's requirement for access, accommodation, facilities, personnel, power, transport and other services.</li><li>(f) the risk of injury or damage to property adjacent to the Site and to the occupiers of such property or any other risk.</li></ul>
<b>4.10</b> Sufficiency of accepted Contract Amount	The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Contract Price. Unless otherwise stated in the Contract, the Contract Price shall cover all his obligations under the Contract and all things necessary for the proper design, execution and completion of the Works, testing and commissioning (including Integrated Testing and Commissioning) and remedying of any defects.

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Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 4.11 Access Route

The Contractor shall be deemed to have satisfied himself as to the suitability and availability of the access routes he chooses to use. The Contractor shall (as between the parties) be responsible for the maintenance of access routes. The Contractor shall provide at his cost signs or directions, which he may consider necessary or as instructed by Engineer for the guidance of his staff, labour and others. The Contractor shall obtain any permission concessions and related easement right that may be required from the relevant authorities for the use of such routes, signs and directions.

The Employer will not be responsible for any claims which may arise from the use or otherwise of any access route. The Employer does not guarantee the suitability or availability of any particular access route, and will not entertain any claim for any non-suitability or non-availability for continuous use during construction of any such route.

### 4.12 Rights of way and Facilities

The Employer will acquire and provide land for Permanent Works and right of way (within CSML's land) for access thereto over routes established by the Contractor. The Contractor shall bear all cost and charges for special or temporary rights of way which he may require including those for access to the Site. The Contractor shall also obtain, at his risk and cost, any additional facility outside the Site which he may require for the purpose of the Works. The Employer reserves the right to make use of these service roads/rights of way for itself or for other Contractors working in the area, as and when necessary without any payment to the Contractor.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.13	<p><b>Programs</b></p> <p>The Contractor shall submit a detailed programme to the Engineer after receipt of the Letter of Acceptance not later than 28 days from the date of receipt of Letter of Acceptance. The Contractor shall also submit a revised programme whenever the Engineer finds that the previous programme is inconsistent with actual progress or with the Contractor's obligations. Each programme shall include the following:</p> <ul style="list-style-type: none"><li>(a) the order in which the Contractor proposes to carry out the Works (including each stage of design, procurement, manufacture, delivery to Site, construction, erection, testing and commissioning),</li><li>(b) all major events and activities in the production of Construction or Manufacture Documents; and</li><li>(c) the sequence of all tests specified in the Contract including Integrated Testing and Commissioning.</li></ul> <p>Unless otherwise stated in the Contract, the programmes shall be developed using precedence networking techniques, showing early start, late start, early finish and late finish dates.</p> <p>No significant alteration to the programmes, or to such arrangements and methods, shall be made without obtaining consent of the Engineer. If the progress of the Works does not conform to the programmes, the Engineer may instruct the Contractor to revise the programmes, showing the modifications necessary to achieve completion within the Time for Completion.</p> <p>Consent by the Engineer to Programmes shall not relieve the Contractor of any of his responsibilities or obligations under the Contract. If the Programmes indicate that a Key Date has not, or will not be met, it shall not, by itself entitle the Contractor to an extension of time in relation to such Key Date.</p>
4.14	<p><b>Progress Reports</b></p> <p>The Contractor shall submit to the Engineer by the end of each calendar month his Monthly Progress Report which shall, amongst other things, highlight actual or potential departures from the Works Programmes and/or the Design Submission Programme and state the measures which the Contractor proposes to take in order to make good or reduce any delay.</p> <p>If requested by the Engineer, the Contractor shall submit to the Engineer, at weekly intervals, a written report as to the progress of off-Site manufacture of Plant, Rolling Stock and Materials.</p> <p>The Contractor shall also submit to the Engineer such other reports as may reasonably be required by him or any relevant authority or public body.</p> <p>The progress reports shall conform to the Employer's Requirements.</p>
4.15	<p><b>Contractor's Equipment</b></p>
4.15.1	<p>All Contractor's Equipment and Temporary Works provided by the Contractor shall, when brought on to the site, be deemed to be exclusively intended for execution of the Works and not be removed without the consent in writing of the Engineer. Such consent shall not be unreasonably withheld or delayed</p>
4.15.2	<p>Upon completion of the Works the Contractor shall remove from the Site all the said Constructional Plant and his unused materials</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.15.3	The Employer shall not, at any time, be liable for the loss or damage to any of the Constructional Plant, Temporary Works or materials save as mentioned in Clauses 14.1
4.15.4	In respect of any Constructional Plant which the Contractor shall have imported for the purpose of the Works, the Employer may assist the Contractor, where required, in procuring any necessary Government consent for re-export of the same after the completion of the Works.
4.15.5	The Employer may assist (but is not obligated to) the Contractor, where required, in obtaining clearance through the Customs of Constructional Plant, materials and other things required for the Works
4.16	<p><b>Safety of Works</b></p> <p>The Contractor shall throughout the contract period of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defect:</p> <ul style="list-style-type: none"> <li>(a) shall engage only qualified and experienced electrical engineers, supervisors, wiremen and helpers with all personal protective equipment (PPE) for execution of project and maintenance of street lighting system. (The personal protective equipments such as Helmet, safety shoes, gloves, safety belts, mask, earplug etc. shall be provided to each employee/ worker by the contractor).</li> <li>(b) Shall use Proper tools and Personal Protective Equipments while executing the installation and maintenance work.</li> <li>(c) take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;</li> <li>(d) have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and insofar as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such persons.</li> <li>(e) provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant authority for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and</li> <li>(f) where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such work.</li> </ul> <p>Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual) and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards. In the case, the Contractor fails in the above, the Employer may provide the necessary arrangements and recover the costs from the Contractor.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

- 4.17 Protection of the Environment
- The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to avoid injury, damage and nuisance to people and property resulting from pollution, noise and other results of his operations. The Contractor shall ensure that air emissions, surface discharges and effluent from the Site during the Contract Period shall not exceed the values indicated in the Employer's Requirements, and shall not exceed the values prescribed by law. The Contractor shall conform to the Employer's Requirements and shall indemnify the Employer against any liability or damages or claims arising out of his operations. The Contractor shall be responsible and liable for any stoppage, closure or suspension of the works due to any contravention of statutory requirements relating to the protection of the environment and shall indemnify and keep indemnified the Employer in this regard.
- The Contractor's Site Environmental Plan shall be developed from his Employer's Safety, Health and Environmental Manual (SHE Manual), as per the Employer's Requirements and Special Conditions of Contract. Nothing extra shall be payable to the Contractor on this account and his Tender price shall be inclusive of expenditure required to be incurred for working as per SHE Manual.
- Contractor shall keep the work place neat and tidy and shall clear all the waste materials of work and dump it at designated location allocated by the employer.
- 4.18 Electricity Water and Gas
- The Contractor shall be responsible for making his own arrangements at his own cost to obtain supply of water, electricity or gas for the Works. The Employer where feasible may at its discretion assist the Contractor in this respect.
- 4.19 Tools, Plants and Equipment Supplied By The Employer
- Except for any specific item mentioned in the Special Conditions of Contract or in Employer's Requirements, the Contractor shall provide all tools, cranes, ladders, manlift, testing instruments, plants and equipment for the Works. In respect of such exceptional tools, plants or equipment committed to be provided by the Employer under terms and conditions specified in the Special Conditions of Contract, the Contractor shall take all reasonable care and shall be responsible for all damages or loss caused by him, his representatives, sub-contractors or his workmen or others while they are in his charge.
- On completion of the contract, the Contractor shall hand over the of the tools, plants and equipment's to the Employer in good order and repair, fair wear and tear expected, and shall be responsible for any failure to account for the same or any damage done thereto.
- The decision of the Engineer as to the amount recoverable from the Contractor on this account shall be final and binding.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.20	Employer's Materials & Excavated Materials	<p>i) Except for items mentioned in the Special Conditions of Contract, the Contractor shall provide all materials for the Works. Material if any, to be provided by Employer will be done only in a phased manner as per pre-approved program, against a Bank Guarantee for the value of the Material and at terms and conditions for issue, upkeep, usage, return and recovery of such Materials as specified in Special Conditions of Contract.</p> <p>ii) Unless otherwise specified, the Contractor shall not sell or remove, except for the purpose of this Contract, sand, stone, clay, ballast, earth, rock or other materials obtained from the work Site and these shall be the property of the Employer and will be disposed off only in the manner instructed by him.</p>
4.21	Sheds, Stores, Yards	<p>It shall be the responsibility of the Contractor to provide at his own expense the required sheds, store houses, and yards for both Permanent and Temporary Works and provide free access to the Engineer and the Engineer's Representative who will have right of inspection including that of instructing the Contractor to remove a particular material from the stores and not to use the same on the Works.</p>
4.22	Temporary Works	<p>All temporary works necessary for the proper execution of the works shall be provided and maintained by the Contractor at his cost and subject to the consent of the Engineer shall be removed by Contractor at his own expense when they are no longer required and in such manner as the Engineer shall direct. In case the Contractor fails to remove the temporary works on completion the Engineer is authorized to get the same removed and recover the cost there of from the Contractor.</p>
4.23	Unforeseeable Physical Conditions	<p>In this Clause "physical conditions" means natural physical conditions, which the Contractor encounters at Site while executing the Works excluding climatic conditions.</p> <p>If, during the execution of the Works, the Contractor shall encounter physical conditions, which, in his opinion, could not have been reasonably foreseen by an experienced Contractor, the Contractor shall forthwith give written notice thereof to the Engineer and if, in the opinion of the Engineer, such conditions could not have been reasonably foreseen by an experienced Contractor, then the Engineer shall certify and the Employer shall pay reasonable additional cost to which the Contractor shall have been put by reason of such conditions in the following cases:</p> <p>(a) for complying with any instruction which the Engineer may issue to the Contractor in connection therewith, and</p> <p>(b) for any proper and reasonable measures approved by the Engineer which the Contractor may take in the absence of specific instructions from the Engineer, as a result of such conditions or obstructions being encountered. The decision of the Engineer as to the additional cost shall be final and binding.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.24	Access for Engineer	The Contractor shall allow the Engineer or the Engineer's Representative or any other person authorised by him, at all times access to the Site, and to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured, fabricated and/or assembled for the Works. The Contractor shall ensure that sub contracts if any shall contain provisions entitling the Engineer or any person authorised by him to have such access.
4.25	Access Road and Way Leaves	Providing access roads/ way leaves to the site will be Contractor's responsibility.
4.26	Contractor to keep Site Clear	During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.  On completion of the works, the Contractor shall clear away and remove from site all Constructional Plant, surplus material and Temporary Works. He should leave the whole of the site and Works in a clean, tidy and workman like condition to the satisfaction of the Engineer.  On completion of Work the Contractor shall also clear away the labour camps, hutments and other related installations and restore the land to its original condition to the satisfaction of the Engineer within 45 days of the physical completion of Work. The cost on account of delay in return of land and reinstatement of original condition within the stipulated time as determined by Engineer will be recovered from the Contractor's dues.  No final payment in settlement of the accounts for Works shall be made or held to be due to the Contractor, till, in addition to any other condition necessary for such final payment, site clearance and clearances of labour camps etc shall have been affected by him. Such clearance may be made by the Engineer through any other agency at the expense of the Contractor in the event of the Contractor's failure to comply with this provision within 7 days after receiving notice to that effect from the Engineer. All expenses on such removal/clearance shall be debitable to the Contractor as loans due from the Contractor to the Employer, and the Employer shall be competent to recover the same from Contractor's on-account or final bills, or from Performance Security amount or from any other amount payable to the Contractor in any other Contract.

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Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

4.27	<p><b>Security of the Site</b></p> <p>The Contractor shall be wholly responsible for security of site and Works. Unless otherwise stated in Special Conditions of Contract</p> <p>(a) the Contractor shall be responsible for keeping unauthorized persons off the Site; and</p> <p>(b) Authorized persons shall be limited to the Employees of the Contractor, Subcontractor or persons authorized by the Engineer.</p>
4.28	<p><b>Contractor's Operations on Site</b></p> <p>The Contractor shall confine his operations to the Site, and to any additional area which may be provided to the Contractor and agreed by the Engineer as working areas. The Contractor shall take all necessary precautions to keep his personnel and equipment within the Site and such additional areas, and to keep and prohibit them from encroaching on adjacent land.</p>
4.29	<p><b>Discoveries</b></p> <p>All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest, in addition to oil and other minerals discovered on the Site shall be the absolute property of the Government of India and the Contractor shall take all the necessary precautions to prevent its workmen or its sub-contractors' workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof, acquaint the Engineer of such discovery and carry out the instructions of the Engineer.</p>
4.30	<p><b>Publicity</b></p> <p>The Contractor shall not publish or otherwise circulate alone or in conjunction with any other person, any articles, photographs or other materials relating to the Contract, the Site, the Works, the Project or any part thereof, nor impart to the Press, or any radio or television network any information relating thereto, nor allow any representative of the media access to the Site, Contractor's Works Areas, or off-Site place of manufacture, or storage except with the permission, in writing, of the Employer. The Contractor shall ensure that his sub-contractors of any tier shall be bound by a like obligation and shall, if so required by the Employer, enforce the same at his own expense. The provisions of this Sub-Clause shall not exempt the Contractor from complying with any statutory provision in regard to the taking and publication of photographs.</p>
4.31	<p><b>Disclosure Of Relationship</b></p> <p>If the Contractor or any partner of the Contractor or Director of the Contractor's company is closely related to any of the Officers of the Employer or the Engineer, or alternatively, if any close relative of an officer of the Employer or the Engineer has financial interest / stake in the Contractor's firm, the same shall be disclosed by the Contractor at the time of filing his tender. Any failure to disclose the interest involved, shall entitle the Employer to rescind the Contract, without payment of any compensation to the Contractor. The Contractor shall note that he is prohibited from developing such interest during the Contract period.</p>

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

<p>4.32 Use of Explosives</p>	<p>Explosives if required on the Work shall be used by Contractor only with prior Approval of the Engineer and in the manner and to the extent permitted by him. The Contractor shall be responsible for safe upkeep of such explosives in a special magazine as per the law on explosives as well as for taking all the precautions in the usage of the explosives with proper license and at Contractor's cost, sole risk and responsibility. The Contractor shall hold the Employer harmless and indemnify for the above.</p>
<p>4.33 Corrupt or fraudulent practices</p>	
<p>4.33.1 Definition</p>	<p>The Employer requires that the Bidders/Contractors, their designated contractors and/or their agents observe the highest standards of ethics during Tendering and execution of this Contract. In pursuance with this policy, the Employer:</p> <ul style="list-style-type: none"> <li>(a) defines, for the purpose of these provisions, the terms set forth below as follows: <ul style="list-style-type: none"> <li>i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to Employer, Engineer or any of their employees, influence in the procurement process or in Contract execution; and</li> <li>ii) "fraudulent practice" means a concealment or 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.</li> <li>iii) Breach of any of the contract condition during execution.</li> </ul> </li> <li>(b) Will reject the Tender for the Work or rescind the Contract if the Employer determines that the Bidder/Contractor has engaged in corrupt or fraudulent practices.</li> <li>(c) Will declare a Contractor ineligible, either indefinitely or for a stated period of time, to be awarded a Contract/s if he at any time determines that the Contractor has engaged in corrupt or fraudulent practices in competing for, or in executing the Contract.</li> <li>(d) The successful Bidders/Contractors shall apprise the Employer through Chief Vigilance Officer, CSML of any fraud/suspected fraud as soon as it comes to their notice.</li> </ul>
<p>4.33.2 Compensation to Contractor on rescission of Contract</p>	<p>In the event of rescission of Contract under Sub-clause 4.33.1, the Contractor shall not be entitled to any compensation whatsoever, except for the work done up to the date of rescission.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 5. DESIGN

The clauses under the head 'Design' are applicable only in 'Design & Build' contracts and in case of 'Part Design & Build' contracts, these are applicable only to part of the contract in which the design is the responsibility of the contractor.

#### 5.1 General Obligations

The Contractor shall design and provide all necessary specifications for the Works in accordance with the site plans and Employer's requirements. Any design detail, plan, drawing, specifications, notes, annotations, and information required shall be provided in such sufficient format, details, extent, size and scale and within such time as may be required to ensure effective execution of Works and/or as otherwise required by the Engineer.

The Contractor holds himself, and his designers as having the experience and capability necessary for the design. The Contractor undertakes that the designers shall be available to attend discussions with the Engineer at all reasonable times during the Contract Period.

The designer shall be the same entity as proposed by the Contractor at the time of pre-qualification, unless otherwise approved by the Employer. The Contractor shall furnish Designer's Warranty in the format approved by the Employer.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### 5.2 Contractor's warranty of design

- a) The Contractor shall be fully responsible, for the suitability, adequacy, integrity, durability and practicality of the Contractor's proposal.
- b) The Contractor warrants that the Contractor's Proposals meet the Employer's Requirements and is fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Employer's Requirements or any part thereof, the Contractor's Proposal shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at Contractor's own cost.
- c) The Contractor warrants that the Works have been or will be designed, installed and otherwise constructed and to the highest standards available using proven up-to-date good practice
- d) The Contractor warrants that the Works will, when completed, comply with enactments and regulations relevant to the Works
- e) The Contractor warrants that the design of the Works and the manufacture of plant have taken or will have taken full account of the effects of the intended manufacturing and installation methods, Temporary Works and Contractor's Equipment
- f) The Contractor shall also provide a guarantee from the Designer for the design for suitability, adequacy, practicality of design for Employer's Requirements.
- g) The Contractor shall indemnify the Employer against any damage, expense, liability, loss or claim, which the Employer might incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.
- h) The Contractor further specifies and is deemed to have checked and accepted full responsibility for the Contractor's Proposal and warrants absolutely that the same meets the Employer's Requirements:
  - i) Notwithstanding that such design may be or have been prepared,
  - ii) developed or issued by the Employer, any of Contractor's consultants, his subcontractors and/or his qualified personnel/persons or cause to be prepared, developed or issued by others.
  - iii) Notwithstanding any warranties, guaranties and/or indemnities that may be or may have been submitted by any other person.
  - iv) Notwithstanding that the same have been accepted by the Engineer

The Contractor shall be fully responsible for the Plants, Materials, goods, workmanship, preparing, developing and coordinating all design Works to enable that part of the Works to be constructed and/or to be fully operational in accordance with the Contract's requirements.

Apart from the Contractor, the above warranty shall also be applicable for his designer. This warranty shall be a part of his sub contract with the designer and should be made available at the time of signing of the Agreement.

No claim for additional payment or extension of time shall be entertained and/or the Contractor shall not be relieved from any obligation/liability under the Contract, for any delay, suspension, impediment to or adverse effect upon the progress of the Works due to any mistake, inaccuracy, discrepancy or omission in or between the Contractor's, the Definitive Design and the final design, or any failure by the Contractor to prepare any Design Data or submit the same to the Engineer in due time and the Contractor shall promptly make good any such defect at his own cost.

### 5.3 Construction and Documents

The Manufacture Documents shall comprise the technical documents specified in approvals, documents described in Sub Clause 5.6 (As Built Document), and Sub Clause 5.7 (Operations and Maintenance Manuals). The Contractor shall prepare all Manufacture Documents in sufficient detail and shall also prepare any other document necessary to instruct the Contractor's personnel. The Engineer shall have the right to inspect the preparation of all these documents wherever they are being prepared.

Each of the Construction Documents shall, when considered ready for use, be submitted to the Engineer for pre-construction review. Unless otherwise stated in Employer's Requirements, each review by the Engineer shall not exceed 21 days, calculated from the date on which the Engineer receives the Manufacture Document. The Engineer may during the review period, give notice to the Contractor that a Manufacture Document fails (to the extent stated) to comply with the Employer's

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Requirements, it shall be rectified, resubmitted and reviewed (and if specified, Approved) in accordance with this Sub-Clause, at the Contractor's cost.

For each part of the Works, and except to the extent that the prior consent of the Engineer shall have been obtained:

- a) In the case of a Construction Document which has (as specified) been submitted for the Engineer's approval
  - i) The Engineer shall give notice to the Contractor that the Construction Document is provided with no objection, with or without comments, or that it fails (to the extent stated) to comply with the Contract
  - ii) Execution of such part of the Works shall not commence until the Engineer has provided with no objection the Construction Document; and
  - iii) The Engineer shall be deemed to have provided with no objection the Construction Document upon the expiry of the review periods for all the Construction and/or Manufacture Documents which are relevant to the design and execution of such parts, unless the Engineer has previously notified otherwise in accordance with sub-paragraph (i)
- b) Construction of such part of the Works shall not commence prior to the expiry of the review of the Construction and/or Manufacture Documents which are relevant to its design and execution;
- c) Construction and/or manufacture shall be in accordance with such reviewed (and if specified, approved) Construction Documents; and
- d) If the Contractor wishes to modify any design or document which has previously been submitted for such pre-construction and/or pre-manufacture review, the Contractor shall immediately notify the Engineer, and based on Engineer's approval shall subsequently submit revised documents to the Engineer in accordance with the above procedure.

If the Engineer instructs that further Construction Documents are necessary for carrying out the Works, the Contractor shall promptly and at Contractor's cost prepare such documents.

Errors omissions, ambiguities, inconsistencies, inadequacies and other defects if found at any stage in construction or any operations manufacture documents, then shall be rectified by the Contractor at his own cost and any approval or consent or review (under this sub-clause or otherwise) by the Employer/Engineer of the Manufacture and Construction Documents under this Sub-clause shall not relieve the Contractor from any obligations or responsibility under the Contract.

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

5.4	<p><b>Technical Standards and Regulations</b></p> <p>The design, the Construction Documents, the execution and the completed Works (including remedying of defects therein) shall comply with the specifications, technical standards, building construction, safety and environmental regulations and other standards specified in the Employer's Requirements applicable to the Works or defined by the applicable laws and regulations</p>
5.5	<p><b>Samples</b></p> <p>The Contractor shall submit at his own cost the following samples and relevant information to the Engineer for pre-construction and/or pre-manufacture review in accordance with the procedure for Construction and/or Manufacture Documents described in Sub-Clause 5.3:</p> <ul style="list-style-type: none"><li>a) manufacturer's standard samples of Materials,</li><li>b) samples (if any) specified in the Employer's Requirements.</li><li>c) A 3D physical model of the project (cut plan of a floor)</li></ul> <p>Each sample shall be labelled as to origin and intended use in the Works.</p>
5.6	<p><b>Spares and Tools</b></p> <p>This clause is applicable for 'Build' part of contract also The Contractor shall provide spares such as control cards, fuses indication lamps for the operation and maintenance of street light management system at his own cost.</p>
5.7	<p><b>As-Built Drawings and Documents</b></p> <p>This clause is applicable for 'Build' part of contract also. The Contractor shall prepare, and keep up-to-date, a complete set of "as-built" records of the execution of the Works, showing the exact "as-built" locations, sizes and details of the Works as executed, with cross references to relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purposes of this Sub-Clause. Six copies shall be submitted to the Engineer prior to the commencement of the Tests on Completion.</p> <p>In addition, the Contractor shall prepare and submit to the Engineer "as-built drawings" of the Works, showing all Works as executed. The drawings shall be prepared as the Works proceed, and shall be submitted to the Engineer for his inspection. The Contractor shall obtain the consent of the Engineer as to their size, the referencing system, and other pertinent details.</p> <p>Prior to the issue of any Taking Over Certificate, the Contractor shall submit to the Engineer one Autocad Soft copy, one full-size original copy and six printed copies of the relevant "as-built drawings", and any further Construction and/or Manufacture Documents specified in the Employer's Requirements. The Works shall not be considered to be completed for the purposes of Taking Over under Sub-Clause 9.1 until such documents have been submitted to the Engineer.</p>
5.8	<p><b>Maintenance Manuals of MEP</b></p> <p>Prior to commencement of the Tests on Completion, the Contractor shall prepare, and submit to the Engineer, Maintenance Manuals in accordance with the Employer's Requirements and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Works. The Works shall not be considered to be completed for the purposes of Taking Over under Sub-Clause 9.1 until such Operation and Maintenance Manuals have been submitted to the Engineer and received his consent.</p>
5.9	<p><b>Intellectual Property Rights and Royalties</b></p> <p>The Contractor shall indemnify the Employer and the Engineer from and against all claims and proceedings on account of infringement (or alleged infringement) of any patent rights, registered designs, copyright, design, trademark, trade name, know-how or other intellectual property rights in respect of the Works, Contractor's Equipment, machines, work method, or Plant, or Materials, or anything whatsoever required for the Works and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall pay all traffic surcharges and other royalties, licence fees, rent and other</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

payments or compensation, if any, for getting stone, sand, gravel, clay or other materials, machine, process, systems, work methods, or Contractor's Equipment required for the Works. The Contractor shall, in the event of infringement of Intellectual Property Rights, rectify, modify or replace at his own cost the Works, Plant or materials or anything whatsoever required for the Works so that infringement no more exist or in the alternative shall procure necessary rights/license so that there is no infringement of Intellectual Property Rights.

The Contractor shall be promptly notified of any claim under this Sub- Clause made against the Employer. The Contractor shall, at his cost, conduct negotiations for the settlement of such claim, and any litigation or arbitration that may arise from it. The Employer or the Engineer shall not make any admission which might be prejudicial to the Contractor, unless the Contractor has failed to take over the conduct of the negotiations, litigation or arbitration within a reasonable time after having been so requested. In the event of Contractor failing to act at Engineer's notice, the Employer shall be at full liberty to deduct any such amount of pending claim from any amount due to the Contractor under this Contract or any other Contract.

Insofar as the patent, copyright or other intellectual property rights in any Plant, Design Data, plans, calculations, drawings, documents, Materials, know-how and information relating to the Works shall be vested in the Contractor, the Contractor shall grant to the Employer, his successors and assignees a royalty-free, non-exclusive and irrevocable licence (carrying the right to grant sub-licences) to use and reproduce any of the works, designs or inventions incorporated and referred to in such Plant, documents or Materials and any such know-how and information for all purposes relating to the Works (including without limitation the design, manufacture, installation, reconstruction, Testing, commissioning, completion, reinstatement, extension, repair and operation of the Works).

If any patent, registered design or software is developed by the Contractor specifically for the Works, the title thereto shall vest in the Employer and the Contractor shall grant to the Employer a non-exclusive irrevocable and royalty- free licence (carrying the right to grant sub-license) to use, repair, copy, modify, enhance, adapt and translate in any form such Software for his own use.

If the Contractor uses proprietary software for the purpose of storing or utilising records the Contractor shall obtain at his own expense the grant of a licence or sub-licence to use such software in favour of the Employer and shall pay such licence fee or other payment as the grantor of such licence may require provided that the use of such software under the licence may be restricted to use relating to the design, construction, reconstruction, manufacture, completion, reinstatement, extension, repair and operation of the Works or any part thereof.

The Contractor's permission referred to above shall be given, inter alia, to enable the Employer to disclose (under conditions of confidentiality satisfactory to the Contractor) programmes and documentation for a third party to undertake the performance of services for the Employer in respect of such programmes and documentation.

If any software is developed under the Contract or used by the Contractor for the purposes of storing or utilising records over which the Contractor or a third party holds title or other rights, the Contractor shall permit or obtain for the Employer (as the case may require) the right to use and apply that Software free of additional charge (together with any modifications, improvements and developments thereof) for the purpose of the design, manufacture, installation, reconstruction, testing, commissioning, completion, reinstatement, extension, repair, modification or operation of the Works, or any part thereof, or for the purpose of any Dispute.

The Employer reserves the right to use other Software on or in connection with the Works.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 6. STAFF AND LABOUR

#### 6.1 Engagement of Staff and Labour

The Contractor shall make his own arrangements for the engagement of staff and labour at his own cost.

#### 6.2 Rates of Wages and Conditions of Labour

Full compliance of statutory requirements apart, the Contractor shall pay rates of wages and observe conditions of labour not less favourable than those established for the trade or the industry where the work is carried out.

The Contractor shall make himself aware of all labour regulations and their impact on the cost and build up the same in the Contract Price. During the Contract Period no extra amount in this regard shall be payable to the Contractor, for whatsoever reason including any revision of rates payable to the labour due to revision of rates payable in Minimum Wages Act.

Labour provided by the Contractor, either directly or through sub-contractors, for the exclusive use of the Employer or the Engineer, shall, for the purpose of this Sub-Clause, be deemed to be employed by the Contractor.

In the event of default being made in the payment of any money in respect of wages of any person employed by the Contractor or any of its sub-contractors of any tier in and for carrying out of this Contract and if a claim therefore is filed in the office of the Labour Authorities and proof thereof is furnished to the satisfaction of the Labour Authorities, the Employer may, failing payment of the said money by the Contractor, make payment of such claim on behalf of the Contractor to the said Labour Authorities and any sums so paid shall be recoverable by the Employer from the Contractor.

#### 6.3 Persons in the service/retired of Employer/Engineer

- a) The Contractor shall not recruit or attempt to recruit, staff and labour from amongst the Employer and the Engineer's personnel.
- b) The Contractor either at the tendering stage or during construction stage will not employ any retired employee of Employer or Engineer of the Employer in any capacity unless such employee has completed at least two years post retirement period or has obtained the no-objection certificate from Employer for being employed with the Contractor. It will be responsibility of the Contractor to collect the Employer's no objection certification from such retired employee and submit the same back to the Employer.

In case of noncompliance of above, in addition to any or several of the courses, referred in Sub-clauses 13.2 being adopted by the Employer the Contractor on Termination of the Contract for the aforesaid reasons will have no claim whatsoever against the Employer except for actual value of the Work executed till the time of Termination.

#### 6.4 Labour Laws

- a) In dealing with labour and employees, the Contractor and his Sub-Contractors (including piece rate and petty Contractors) shall comply fully with all laws and statutory regulations pertaining to engagement, payment and upkeep of the labour in India. For any non-compliance with statutory requirements the contractor will be terminated by the employer.
- b) The Contractor shall have a Labour Welfare officer who shall be responsible for labour welfare and compliance with prevalent labour laws, statutes and guidelines. In this context the Contractor is also required to familiarize himself with Kerala Labour Welfare Fund Rules and comply with the same.

Contractor

Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<p>c) The Contractor shall prepare and submit compliance reports of adherence to labour laws as and when desired by the Engineer.</p>		
<p>6.5 Working Hours</p> <p>The Contractor, if required, shall carry out work during night hours or in shifts, unless specifically provided otherwise in the Contract. No increase in rates or extra payments shall be admissible for night work. The Contractor shall provide adequate lighting and safety arrangements.</p>		
<p>6.6 Facilities for Staff and Labour</p> <p>The Contractor shall provide and maintain at his own expense, all necessary accommodation and welfare facilities as per prevailing labour &amp; welfare laws for his (and his Sub- contractor's) staff and labour. All accommodation shall be maintained in a clean and sanitary condition by the contractor at his cost.</p>		
<p>6.7 Health and Safety</p> <p>Precaution shall be taken by the Contractor to ensure the health and safety of his staff and labour. The Contractor shall, in collaboration with and to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as per the Engineer's requirement and will ensure complete compliance with relevant clauses of Employer's Health, Safety and Environment Manual (SHE Manual).</p>		
<p>6.8 Contractor's Superintendence</p> <p>The Contractor shall provide all necessary superintendence during the design and execution of the Works, and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. Such superintendence shall be provided by sufficient persons having adequate knowledge of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents) for the satisfactory and safe execution of the Works.</p>		
<p>6.9 Provision Of Efficient And Competent Staff</p> <p>The Contractor shall employ (or cause to be employed) only persons who are careful and appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative, who in the opinion of the Engineer:</p> <ul style="list-style-type: none"> <li>a) persists in any misconduct,</li> <li>b) is incompetent or negligent in the performance of his duties,</li> <li>c) fails to conform with any provisions of the Contract, or persists in any conduct which is prejudicial to safety, health, or the protection of the environment.</li> </ul>		
<p>6.10 Preservation of Peace and orderly conduct</p>		
<table border="1"> <tr> <td> <p><b>6.10.1</b></p> </td> <td> <p>The Contractor shall be responsible for preservation of peace and orderly conduct at the site and its neighbourhood by Contractor's employees, Representatives, petty contractors, Sub Contractors etc. In case, deployment of a Special Police Force, becomes necessary at or near Site, during the tenure of Works, the</p> </td> </tr> </table>	<p><b>6.10.1</b></p>	<p>The Contractor shall be responsible for preservation of peace and orderly conduct at the site and its neighbourhood by Contractor's employees, Representatives, petty contractors, Sub Contractors etc. In case, deployment of a Special Police Force, becomes necessary at or near Site, during the tenure of Works, the</p>
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Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	expenses for the same shall be borne by the Contractor.
<b>6.10.2</b>	The Contractor shall at all times take all reasonable precautions which will include that no labour or employee is permitted to work at site in an intoxicated state or under influence of drugs, to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour, and to preserve peace and protection of persons and property in the neighbourhood of the Works against such conduct.

6.11	<b>Labour to be Contractor's Employee</b> If, the Contractor directly or through petty contractors or Sub-Contractors supplies any labour to be used wholly or partly under the direct orders of the Contractor/Engineer in connection with any work being executed by the Contractor, such labour shall, for the purpose of this clause, be deemed to be persons employed by the Contractor.
6.12	<b>Report Of Accidents To Labour</b> The Contractor shall be responsible for safety of all employees, employed by him on Works, directly or through petty contractors or Sub-Contractors, and shall report accidents to any of them, however, and wherever occurring on Works, to the Engineer or the Engineer's Representative, and shall make every arrangement to render all possible assistance and to provide prompt and proper medical attention. The compensation for affected Workers or their relatives shall be paid by the Contractor in such cases with utmost expeditious in accordance with the Employees Compensation Act.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

6.13 Claim` on account of violation of Labour laws

The Contractor shall be solely accountable for violation of any labour law by it, its petty contractors or Sub Contractors and will pay any such claim/damage to the authorities forthwith on demand. If any moneys shall, as a result of any instructions, directions or decisions from the Authorities or claim or application made under any of the labour laws or regulations, be directed to be paid by the Employer, such moneys shall be deemed to be moneys payable to the Employer by the Contractor and he will pay the same to the Employer forthwith on demand, without demur and without asking for any reasons/explanations from the Employer. On failure of the Contractor to repay the Employer any moneys paid or to be paid by it as aforesaid within seven days after the same shall have been demanded, the Employer shall be entitled to recover the amount from any moneys due or accruing to the Contractor under this or any other Contract with the Employer.

### 7. QUALITY CONTROL

7.1 Manner of Execution

All Plant, goods, and Materials to be supplied shall be manufactured, and all work to be done shall be executed, in the manner set out in the Contract. Where the manner of manufacture and execution is not set out in the Contract, the work shall be executed in a proper, workmanlike and careful manner, with properly equipped facilities and non-hazardous Materials, and in accordance with modern recognized good practice. Approval for such works should be taken well in advance from the Engineer.

7.2 Sources of Materials being supplied shall be intimated to the Engineer and are subject to his approval. Materials that are not specified in the Contract document shall conform to the relevant Indian Standards or its absence conform to any International Standard approved by the Engineer. Samples for the items shall be supplied by the Contractor at his own cost.

7.3 Delivery to Site

The Contractor shall be responsible for procurement, transport, receiving, unloading and safe keeping of all Plant, construction, Materials, Contractor's Equipment and other things required for the completion of the Works.

7.4 Inspection

The Employer and the Engineer shall at all reasonable times have full access to all parts of the Site and to all places from which natural materials are being obtained, and during production, manufacture, fabrication and construction (at the site and elsewhere) be entitled to inspect, examine, measure and test the materials and workmanship, and to check the progress of manufacture, of all Plant, goods, construction and Materials to be supplied under the Contract.

The Contractor shall give the Engineer full opportunity to carry out these activities including providing access, facilities, permissions and safety equipment's. No such Activity/inspection shall relieve the Contractor from any obligation or responsibility.

7.5 Testing

This sub clause shall apply to all tests specified in the Contract, other than the Tests after Completion. The Contractor shall provide all documents and other information necessary for all types of testing and such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as are necessary to carry out such tests efficiently.

The Contractor shall agree, with the Engineer, the time and place for the testing of any Plant, goods, Materials and other parts of the Works as specified in the Contract. All the mandatory tests for the materials shall be conducted as per MoST/CPWD specification

The Engineer shall give the Contractor not less than 24 hours' notice of his intention to attend the tests. All registers, files etc shall be maintained by the contractor in good condition under the supervision of the Engineer.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

7.6	Rejection	
	(i)	If, as a result of inspection, examination or testing, any Plant, goods, Material, design or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the same and by giving notice to the Contractor with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item after rectification complies with the Contract.
	(ii)	If the Engineer requires such Plant, goods, Material, design or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If such rejection and retesting cause the Employer to incur additional costs, such costs shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any sum due, or to become due, to the Contractor.
	(iii)	Notwithstanding any previous Test or certification, the Engineer shall have the authority to instruct the Contractor :-  a) To remove from the Site and replace any plant or Materials which is not in accordance with the Contract.  b) To remove and re-execute any other work which is not in accordance with the Contract.  c) Execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.
	(iv)	In case of default on the part of the Contractor in carrying out such order, the Employer shall be entitled to employ and pay other parties, to carry out the same, and all expenses consequent thereof or incidental thereto, shall be recoverable from the Contractor or may be deducted by the Employer from any sum which may be due to the Contractor.
7.7	Liability after Inspection and Testing	The Contractor shall not be released from any liability or obligation under the Contract by reason of any such inspection or testing or witnessing of testing, or by the submission of reports of inspection or testing to the Engineer.
7.8	Ownership of Plant and Materials	Deleted
7.9	Cost of Employer's Attendance Including Travel	The Employer shall bear the costs of attendance including travel by the Employer or his Representative for the purposes of Sub-Clauses 7.4 and 7.5 above. The cost of attendance including travel by the Employer, Engineer or his Representative for the purpose of Sub-clause 7.6 shall be borne by the Contractor.
7.10	Covering up of Works	
7.10.1	Examination of work Before covering up	<b>No work or part of work shall be covered up or put out of view, without the prior approval of the Engineer or the Engineer's Representative.</b>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

7.11 Tests after Completion	
<p><b>7.11.1 Contractor's Obligations</b></p>	<p>The Contractor shall carry out the Tests on Completion at his own cost in accordance with the Contract after providing the documents in accordance with Sub-Clauses 5.4 and 5.5. The Contractor shall give, to the Engineer, 21 days' notice of the date after which the Contractor will be ready to carry out the Tests on Completion. Unless otherwise agreed, such Tests shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.</p> <p>Unless otherwise stated in Special Conditions of Contract, the Tests on Completion shall be carried out in the following sequence</p> <ul style="list-style-type: none"> <li>(a) pre-commissioning test, which shall include appropriate instructions and ("dry" or "cold") functional tests to demonstrate that each item of the Plant, goods and Work can safely undertake the next stage</li> <li>(b) Commissioning Test shall include the specified operational tests to demonstrate that Works or Sections can be operated safely and as specified under all available operating condition</li> <li>(c) trial operation which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract</li> </ul> <p>The Contractor at his cost shall arrange all tools, equipments, gadgets, facilities or as deemed necessary by the Engineer for such tests, In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed the Tests on Completion described in sub-paragraphs (a), (b) or (c), the Contractor shall provide the Engineer and the Employer with a certified report of the results of all such Tests.</p>
<p><b>7.11.2 Delayed Tests</b></p>	<p>If the Engineer opines that Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out such Tests within 21 days after the receipt of the notice. The Contractor shall carry out such Tests on such day or days as the Contractor may fix and of which he shall give notice to the Engineer.</p> <p>If the Contractor fails to carry out the Tests on Completion within 21 days, the Engineer may proceed with such Tests at the risk and cost of the Contractor. The Tests on Completion then shall be deemed to have been carried out in the presence of the Contractor and the results of such Tests shall be accepted as accurate.</p>
<p><b>7.11.3 Retesting</b></p>	<p>If the Works, or a part thereof, or a Section, fail to pass the Tests on Completion, Sub-Clause 7.6 "Rejection" shall apply, and the Engineer or the employer may require such failed Tests, and the Tests on Completion on any related work, to be repeated under the same terms and conditions.</p>
<p><b>7.11.4 Failure to Pass Tests on Completion</b></p>	<p>If the Works, or a part thereof, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 7.11.4, the Engineer shall be entitled to:</p>

Contractor

Procuring Entity / Employer

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

	<p>(a) order further repetition of Tests on Completion under Sub-Clause 7.11.4;</p> <p>(b) reject the Works, or a part thereof, or a Section (as the case may be), in which event the Employer shall have the same remedies against the</p> <p>(c) Contractor as are provided under Clause 13; or issue a Taking Over Certificate, if the Employer so requires. The Contract</p> <p>Price shall then be reduced by such amount as determined by the Engineer and as shall be appropriate to cover the reduced value to the Employer as a result of this failure. The Contractor shall then proceed in accordance with his other obligations under the Contract.</p>
<p><b>7.12 Integrated testing and system commissioning</b></p>	
<p><b>7.12.1 Integrated Testing</b></p>	<p>Tests on Completion shall also include Integrated Testing where applicable as per the contract conditions. The Contractor shall, following satisfactory completion of tests on his works, equipment, sub-systems or system, perform, at the direction of the Engineer, programme of tests to verify and confirm the compatibility and complete performance of his works, equipment, sub-systems or system with the works, equipment, sub-systems or system provided by others.</p>
<p><b>7.12.2 Compilation of Test Results</b></p>	<p>The results of the Integrated Testing and Commissioning shall be compiled and evaluated by the Engineer and the Contractor.</p>
<p><b>7.12.3 Retesting</b></p>	<p>If the Works, or a part thereof, or a Section, fail to pass the Integrated Testing and Commissioning, the Engineer shall require such failed Tests, to be repeated under the same terms and conditions. If such failure and retesting result from a default of the Contractor and cause the Employer to incur additional costs, the same shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due, or to become due, to the Contractor.</p>
<p><b>7.12.4 Failure to Pass Test</b></p>	<p>If the Works, or a part thereof, or a Section, fail to pass Integrated Testing and Commissioning and the Contractor in consequence proposes to make any adjustment or modification to the Works or a part thereof, or a section, the Engineer may, with the approval of the Employer, instruct the Contractor to carry out such adjustment or modification, at his own cost and to satisfy the requirements of Integrated Testing and Commissioning within such time as the Employer / Engineer may deem to be reasonable.</p>

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<p><b>7.12.5</b> Statutory Requirements</p>	<p>The Contractor along with others shall carry out all statutory tests and trials, under the supervision of the Engineer, necessary for obtaining sanction of the competent authority for opening the system for public carriage of passengers.</p>
<p><b>8. TIME MANAGEMENT</b></p>	
<p><b>8.1</b> Commencement of Works</p>	<p>The Contractor shall commence the Works on the date specified in the Letter of Acceptance or if no date is specified in the Letter of Acceptance, on the date specified in an instruction in writing to that effect from the Engineer (Notice to Proceed). Thereafter the Contractor shall proceed with due diligence, without delay, and in accordance with the programme or any revised or modified programme of the Works. Time will be the essence of Contract and time for Completion shall run from the date the Contractor is to commence the Works under this Clause.</p> <p>The Contractor shall not commence the construction, manufacture or installation of the Works or of any part of the Works unless and until the Engineer has endorsed the relevant Working Drawings in accordance with the Employer's Requirements.</p>
<p><b>8.2</b> Time for Completion</p>	<p>Time is the essence of Contract and will remain so at all times during the pendency of the Contract including the extended period of Contract. The Contractor shall ensure defect free completion and have passed the tests on the completion, including integrated testing where ever in the scope of work and commissioning of the whole of the Works and/or parts thereof before the same is taken over by the Employer.</p>
<p><b>8.3</b> Delay</p>	<p>In case of delay on the part of the Contractor, the Contractor shall be liable to pay liquidated damages and any other compensation for the damages suffered by the Employer as per clause 8.5. This is without prejudice to the right of the Employer to rescind the Contract.</p> <p>Failure or delay by the Employer or the Engineer, to hand over to the Contractor the Site necessary for execution of Works, or any part of the Works, or to give necessary notice to commence the Works, or to provide necessary Drawings or instructions or clarifications or to supply any material, plant or machinery, which under the Contract, is the responsibility of the Employer, shall in no way affect or vitiate the Contract or alter the character thereof; or entitle the Contractor to damages or compensation thereof but in any such case, the Engineer shall extend the time period for the completion of the Contract, as in his opinion is / are reasonable.</p>
<p><b>8.4</b> Extension of Time for Completion</p>	
<p><b>8.4.1</b> Extension of Time</p>	<p>The Contractor may apply for an extension of the Time for Completion if the Work is or will be delayed either before or after the Time for Completion by any of the following causes:</p> <ol style="list-style-type: none"> <li>a) "Force Majeure" referred to in Clause 16</li> <li>b) The Contractor's work held up for not being given possession of or access to the Site in accordance with the Contract</li> <li>c) Instruction of the Engineer to suspend the Works and the Contractor not being in default as to reasons of suspension.</li> <li>d) Acts or omissions of other Designated Contractors in executing work not forming part of this Contract and on whose performance, the performance of the Contractor necessarily depends.</li> </ol>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	<p>e) Any act of prevention or Breach of Contract by the Employer and not mentioned in this Clause</p> <p>f) Any order of Court restraining the performance of the Contract in full or in any part thereof</p> <p>g) Any other event or occurrence which, according to the Employer is not due to the Contractor's failure or fault, and is beyond his control without Employer being responsible for the same.</p> <p>h) An Employer's Variation</p> <p>However, the Contractor shall not be entitled to any extension of time where the instructions or acts of the Employer or the Engineer are necessitated by or intended to cure any default of or breach of Contract by the Contractor or where any delay is due to</p> <p>a) the failure of sub-contractor, to commence or to carry out work in due time,</p> <p>b) non-availability, or shortage of Contractor's equipment, labour, utility services, Plant and Materials,</p> <p>c) inclement weather conditions, and</p> <p>d) the Contractor not fulfilling his obligations under Sub-Clause 4.4.</p> <p>If the Contractor considers himself to be entitled to an extension of time for Completion, he shall give notice to the Engineer of such intention as soon as possible and in any event within 28 days of the start of the event giving rise to the delay and full and final supporting details of his application within 21 days of the last day of delay, together with any notice required by the Contract and relevant to such Clause.</p> <p>The Engineer shall proceed in accordance with Sub-Clause 3.5 to agree or determine either prospectively or retrospectively such extension of the Time for Completion as may be due. The Engineer shall notify the Contractor accordingly. The extension of time including that of key date shall not entitle the contractor to retain the advance which shall be governed by Clause 11.2.</p>
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**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

<p><b>8.4.2</b> Extension of time for completion for other reasons</p>	<p>The Contractor shall not be entitled to an extension of time by reason of any delay to any activity in the carrying out of the Works unless in the opinion of the Engineer such delay results in or may be expected to result in a delay to completion of the Works, or achievement of any Stage by the relevant Key Date. Whether or not the Contractor fails to achieve any Milestone by reason of any delay shall not by itself be material to the Contractor's entitlement to an extension of time.</p> <p>Any extension to a Key Date shall not by itself entitle the Contractor to an extension to any other Key Date.</p>
<p><b>8.4.3</b> Extension of time for delays due to Contractor</p>	<p>If the delay in the completion of the whole Works or a portion of the Works, for which an earlier completion period is stipulated, is due to the Contractor's failure or fault, and the Engineer is of the view that the remaining Works or the portions of Works can be completed by the Contractor in a reasonable and acceptable short time, then, the Engineer may allow the Contractor extension or further extension of time at its discretion with or without liquidated damages, for completion, as he may decide.</p>
<p><b>8.5</b> Liquidated Damages for Delay</p> <p>Time is the essence of the Contract. Appendix to the Form of Tender shall include in respect of the Works and in respect of any Stage, a percentage of the total contract value which will be recoverable from the Contractor as liquidated damages for delay in completion of the Works or in achievement of a stage by a particular Key Date. The total amount of liquidated damages in respect of the Works in all stages shall, however, not exceed the limit of liquidated damages stated in the Appendix to the Form of Tender. The aforesaid liquidated damages do not, however, include the sums payable by the Employer to Designated Contractors on account of delay caused by the Contractor to Designated Contractors which sums shall be recoverable from the Contractor in addition to any liquidated damages payable under this clause, the total ceiling limit of which is 15% of the contract value including liquidated damages levied under the provision of Appendix 1 to the Form of Tender.</p> <p>The liquidated damages are recovered by the Employer from the Contractor for delay and not as penalty.</p> <p>The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any sum due, or to become due, to the Contractor. In the event of an extension of time being granted under Sub- Clause 8.3, the amount due under this Sub-Clause shall be recalculated accordingly, and any over-payment refunded. The payment or deduction of such damages shall not relieve the Contractor from his obligations to complete the Works, or from any other of his duties, obligations or responsibilities under the Contract.</p> <p>The Contractor shall use and continue to use his best endeavours to avoid or reduce further delay to the Works, or any relevant Stages.</p> <p>At any time after the Employer has become entitled to liquidated damages, the Engineer may give notice to the Contractor under Sub- Clause 13.1, requiring the Contractor to complete the Works within a specified reasonable time. Such action shall not prejudice the Employer's entitlements to recovery of liquidated damages, under this Sub-Clause and to terminate under Sub- Clause 13.2.</p> <p>The decision of the Engineer as to the liquidated damages payable by the Contractor under this Clause shall be final and binding</p>	
<p><b>8.6</b> Rate of Progress</p> <p>If for any reason which does not entitle the Contractor to an extension of time, the rate of progress of the Works is at any time, in the opinion of the Engineer, too slow to ensure timely completion of the Works or achievement of any Stage by the relevant Key Date the Engineer may so notify the Contractor in writing. The Contractor shall thereupon take such steps as are necessary, or in</p>	

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

default of taking such steps, shall take such steps as the Engineer may reasonably instruct in writing, to expedite progress so as to complete the Works or any Section in time or achieve any Stage by the relevant Key Date. The Contractor shall not be entitled to any additional payment for taking such steps.

If any steps taken by the Contractor in meeting his obligations under this Sub-Clause cause the Employer to incur additional costs, such costs shall be recoverable from the Contractor by the Employer, and shall be deducted by the Employer from any sum due, or to become due, to the Contractor.

If, in the opinion of the Engineer, the steps taken by the contractor to expedite the progress are not adequate, the Engineer may take a recourse as per Clause 13.2.4 of this GCC.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 8.7 Suspension of Work

The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. During suspension, the Contractor shall protect, store and secure such part or whole of the Works against any deterioration, loss or damage.

### 8.8 Consequences of Suspension

The Contractor shall not be entitled to extra cost (if any), incurred by him, during the period of suspension of Work., if such suspension is

- a) provided for in the Contract, or
- b) necessary for proper execution of Works or by reasons of weather condition or by some default on the part of the Contractor, or
- c) necessary for the safety of Works or any part thereof or
- d) necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site or
- e) to ensure safety and to avoid disruption of traffic and utilities, as also to permit fast repairs and restoration of any damaged utilities,

If suspension is ordered by the Engineer for reasons other than those mentioned in sub-clause 8.8 then the Contractor's entitlement are in the table below:

Suspension Period	Extension of Time	Compensation for the suspension period	Remarks
Upto 14 days	NO	NO	Engineer may, at his sole discretion give extension time in exceptional circumstances
15-30 days	YES	NO	Extension of time as considered proper by the Engineer
Above 30 days	YES	As per Daily rate of wages for idle labour/employees 70% of the rate for hire charges for idle plant and Machinery (excluding cost of fuel and lubricants) 15% above all these items to cover overhead costs.	Compensation as assessed by the Engineer on submission of documentary proof by the Contractor to Engineer's satisfaction
Above 90 days If Contractor asks for fore closure	NO	As per Clause 13.3.4	Contractor may ask for closure of the Contract, or deletion from the Contract of that part of Works which has been suspended.

## 9. EMPLOYER'S TAKING OVER

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 9.1 Taking Over Certificate

The Works shall be taken over by the Employer when they have been completed in accordance with the Contract, have passed the Tests on Completion, including Integrated Testing and Commissioning where ever applicable as per the contract, and a Taking Over Certificate for the Works shall be issued. If the Works are divided into Sections, the Contractor shall be entitled to apply for a Taking Over Certificate for each Section.

The Contractor may apply by notice to the Engineer for a Taking-Over-Certificate not earlier than 14 days before the works or section (as the case may be) will, in the Contractor's opinion, be complete and ready for taking over. The Engineer shall, within 28 days after the receipt of the Contractor's application shall conduct a complete joint survey of the works including carrying out any tests prescribed in the contract and prepare a list of defects and outstanding works and:

- a) issue the Taking Over Certificate to the Contractor, stating the date on which the Works or Section were completed, including the Tests on Completion and Integrated Testing and Commissioning where ever applicable as per the contract in accordance with the Contract if defects and/or outstanding works are minor that does not affect the use and safety of the Works or Section for their intended purposes. The list of such works along with the target date of completion for each work shall be enclosed with the taking over certificate and completion of all these works /rectification of defects within the stipulated time shall be the responsibility of the contractor and any failure in it may be considered a reason by the Engineer to cancel the taking over certificate issued earlier; or
- b) reject the application, giving his reasons and specifying the work required to be done by the Contractor to enable the Taking Over Certificate to be issued. The Contractor shall then complete such work before issuing a further notice under this Sub-Clause.

### 9.2 Taking over of Parts of the Works

The Engineer may, at the sole discretion of the Employer issue a Taking Over Certificate for any part of the Permanent Works by following the procedure stipulated in Clause 9.1 above if:

- a) the Employer uses that part of the Works for revenue service before the Taking Over Certificate is issued for the entire work.
- b) the balance part is not completed not due to the fault of the contractor and contractual date of completion for the completed part is over.

## 10. DEFECTS LIABILITY

### 10.1 Completion of Outstanding Work and Remedying Defects

"Defects Liability Period" shall mean the defects liability period stated in the Special Conditions of Contract calculated from the date of taking over of the Works. Provided that, if any part of the Works or sub-systems or component of that part has been replaced, renewed or repaired except minor repair, the "Defects Liability Period" in respect of that part or sub-system or components of that part shall start from the date such replacement, renewal or repair has been completed to the satisfaction of the Engineer.

In order that the Construction Documents and the Works shall be in the condition required by the Contract (fair wear and tear excepted) at, or as soon as practicable after the expiry of the Contract Period, the Contractor shall execute all such work of amendment, reconstruction, and remedying defects or damage, as may be instructed in writing by the Employer or the Engineer during the Defect Liability Period.

### 10.2 Cost of Remedying Defects

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

All work referred to in Sub-Clause 10.1 shall be executed by the Contractor at his own cost, if the necessity for such work is due to:

- a) the design of the Works;
- b) Plant, Materials or workmanship not being in accordance with the Contract; or
- c) failure by the Contractor to comply with any of his other obligations.

If in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an adjustment to the Contract Price, with the approval of the Employer, and shall notify the Contractor accordingly. In this event, Sub-Clause 12.3 shall apply to such work.

### 10.3 Extension of Contract Period

The Contract Period shall be extended by a period, after the Works are taken over, during which the Works or any Section or item of Plant, cannot be used, for the purposes for which they are intended, by reason of a defect or damage.

When delivery of Plant, and/or Materials, or erection of Plant, or installation of Materials, has been suspended under Sub-Clause 8.7, the Contractor's obligations under this Sub-Clause shall not apply to any defects or damage occurring more than three years after the Plant, Rolling Stock and/or Materials would otherwise have been delivered, erected and taken over.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 10.4 Failure to Remedy Defects

If the Contractor fails to remedy any defect or damage within such time as the Employer / Engineer may deem to be reasonable, the Employer or the Engineer may fix a date on or by which to remedy the defect or damage, and give the Contractor reasonable notice of such date. If the Contractor fails to remedy the defect or damage by such date and the necessity for such work is due to a cause stated in Sub-Clause 10.2(a), (b) or (c), the Employer may (at his sole discretion):

- a) carry out the work himself or by others, in a reasonable manner and at the Contractor's risk and cost, but the Contractor shall have no responsibility for such work: the costs incurred by the Employer in remedying the defect or damage shall be recoverable from the Contractor by the Employer;
- b) require the Engineer to determine and certify a reasonable reduction in the Contract Price; or
- c) if the defect or damage is such that the Employer has been deprived of substantially the whole of the benefit of the Works or parts of the Works, terminate the Contract in respect of such parts of the Works as cannot be put to the intended use, the Employer shall then be entitled to recover all sums paid for such parts of the Works together with the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor, and Sub-Clause 13 shall not apply.

### 10.5 Removal of Defective Work

If the defect or damage is such that it cannot be remedied expeditiously on the Site and if the Employer gives consent, the Contractor may, remove from the Site for the purposes of repair any part of the Works, which is defective or damaged. This consent may require the Contractor to increase the amount of Performance Security by the full replacement cost of these items or to provide other appropriate security acceptable to the Employer.

### 10.6 Further Tests

If the remedying of any defect or damage is such that it may affect the performance of the Works, the Engineer may require that Tests on Completion, including Integrated Testing, be repeated to the extent necessary. The requirement shall be made by notice within 28 days after the defect or damage remedied. Such Tests shall be carried out in accordance with Clause 7.11

### 10.7 Right of Access

Until the Performance Certificate has been issued, the Contractor shall have the right of access to all parts of the Works and to records of the working and performance of the Works, except as may be inconsistent with any reasonable security restrictions by the organisation responsible for operating the Works.

### 10.8 Contractor to Search

The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is one for which the Contractor is liable, the Cost of such search shall be added to the Contract Price.

### 10.9 Performance Certificate

The Contract shall not be considered to be completed until the Performance Certificate has been signed by the Engineer and delivered to the Contractor at the end of 'Defect Liability Period, stating the date on which the Contractor completed his obligations related to completion of works and rectification of defects during Defect Liability Period to the Engineer's satisfaction. Only the Performance Certificate shall be deemed to constitute approval of the Works.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

10.10 Unfulfilled Obligations	
<p>After the Performance Certificate has been issued, the Contractor and the Employer shall remain liable for the fulfilment of any obligation, which remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.</p>	
10.11 Emergency defect rectification	
<p>If any defect or damage is one requiring immediate attention from safety, environmental or operational viewpoint, the Engineer has the authority to proceed with rectification in any manner suitable and deduct such sums from the Contract Price.</p>	
<b>11. CONTRACT PRICE AND PAYMENT</b>	
<b>11.1 The Contract Price</b>	
11.1.1	<p>(i) Unless otherwise stated in the Special Conditions of Contract the Contract Price, subject to any adjustment thereto in accordance with the Contract shall be all inclusive (including all taxes, duties, royalties etc.) including: GST, Value Added Tax (VAT) paid under VAT act 2005 where work is done in Kerala. Value added tax (VAT) paid under other State Govt VAT act if work is done in that state.</p> <p>(ii) Nothing extra shall be payable over the quoted rates, notwithstanding any provision to the contrary in any law for the time being in force, save and except what is specifically provided in General or Special Conditions of Contract.</p> <p>(iii) The reimbursement (as per this Sub-clause) of whatsoever nature shall be provided only for Permanent Works. No reimbursement (as per this Sub-clause) shall be provided for Temporary Works and fuel.</p>
11.1.2 <b>Maintaining records and Availing Exemptions</b>	<p>(i) In the event of exemption of custom duties, excise duties, GSTCST/VAT or any other cess/levy being granted by the Government in respect of the Works, the benefit of the same shall be passed on to Employer. The Contractor shall therefore maintain meticulous records of all the taxes and duties paid and provide the same as and when required by the Employer, so that the Employer is able to avail the reimbursement for which CSML may issue a procedure order separately. Alternatively, the Employer may direct the Contractor to get the reimbursements based on exemption certificates / government's order and it shall be obligatory on part of the Contractor to get the reimbursements from the statutory authorities and pass on the benefit to CSML.</p> <p>(ii) In case of Contractor's failure in availing the exemptions as stipulated above, the recovery of equivalent amount will be made from Contractor's dues.</p>
11.1.3 <b>Adjust in Contract Price</b>	<p>Adjustment in contract price on account of inflation shall be done only if a "Price Variation Formula" is given in the special conditions of contract otherwise it will be a fixed price contract.</p>
11.1.4 <b>Change in Taxes/ Duty</b>	<p>The Contract Price shall not be adjusted to take into account any increase or decrease in cost resulting from any change in taxes, duties, levies from the last date of submission of the Tender to the completion</p>

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Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	date including the date of the extended period of Contract unless a contrary provision exists in Special Conditions of Contract
<b>11.2 Advances</b>	
<b>11.2.1 Mobilisation Advance</b>	<p>Mobilisation advance shall be generally 10% of original contract value payable in two equal instalments or as mentioned in the Special Conditions of Contract and shall be payable in one or two equal instalments as specified in Special Conditions of Contract. The first instalment shall be paid after mobilisation has started and next instalment shall be paid after satisfactory utilization of earlier instalment.</p> <p>Mobilisation advance shall be paid interest free against acceptable Bank Guarantee from a scheduled commercial bank in India. The Contractor, once the 50% of mobilisation advance has been recovered, shall have a onetime option to reduce the Bank Guarantee for the mobilisation advance by the amount recovered.</p>
<b>11.2.2 Written Request for Advances</b>	Advances as admissible, shall be payable only on Contractor's written request to the Employer.
<b>11.2.3 Recovery of Advances</b>	<p>a) The recovery of Advances shall commence when 20% of the original contract value of the work has been paid and it will be completed by the time 85% of the Contract Value has been paid or the original completion date whichever is earlier. As far as possible the recovery of advances shall be limited to 30% of an account bill.</p> <p>b) No advance shall be given after 40% of the original contract amount has been paid.</p> <p>c) The contractor shall always have the option to have the recoveries commenced and / or completed earlier, and / or to have recoveries affected in instalments of higher amount and also to repay part or whole of the advance by direct payment rather than through On-account Bills.</p>
<b>11.2.4 Interest in Case of Delay in Repayment of Advances</b>	Should there be delay in the progress and completion of work, as a result of which it is not possible to recover the advance and interest thereon, before the date of completion stipulated in the Contract, then the interest to be charged from the Contractor on the remaining portion of the advance beyond the original completion date specified in the Contract, shall be the State Bank of India prime lending Rate plus 2% per annum or 10% per annum whichever is higher.
<b>11.2.5 Advances to be Used Only for This Work</b>	<p>The advances shall be used by the Contractor strictly for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interests in one go without demur.</p> <p>Employer retains the right for any other remedy prescribed for breach of Contract in this regard.</p> <p>The Contractor, if required by the Engineer shall provide the details of utilisation of Mobilization advance.</p>

Contractor

Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<b>11.3 Provisional Payment against Material at Site</b>	
11.3.1	A provisional payment on account of main construction materials required for the Permanent Works, shall be paid on request of the Contractor after these materials are brought to Site, against an Indemnity Bond in a form acceptable to Employer is duly executed. The payment schedule of major electrical items is shown in table 11.3.5
11.3.2	<b>Written Request for Advances/Provisional Payment against material at site</b>
11.3.3	<b>Recovery of Advances/Provisional Payment</b>
11.3.4	<b>Documents for payment</b>
11.3.5	<b>Payment schedule</b>

Contractor

Procuring Entity / Employer

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

	amount of the bill.
<b>11.4 Application for Interim Payment Certificates</b>	
11.4.1	<p>In case of 'Lump Sum' contract with cost centre and Milestone payment, the fixed Lump Sum Price shall be apportioned by the Contractor amongst the various Cost Centre's. The amount thus apportioned under each Cost Centre will be further apportioned amongst various Milestones with the approval of the Employer. The Contractor shall be entitled to submit to the Engineer requests for interim payments only upon the achievement of one or more of the Milestones described in the Cost Centre.</p> <p>At the beginning of each month, the Engineer shall issue to the Contractor certificate in respect of each Milestone due to be achieved in the preceding month stating:</p> <ul style="list-style-type: none"> <li>a) the date on which the Milestone was achieved; or</li> <li>b) the non-achievement of the Milestone.</li> </ul> <p>The Contractor shall submit a statement in three copies to the Engineer at the beginning of each month, in a form approved by the Engineer, showing the amounts to which the Contractor is entitled, together with supporting documents, including Milestone Certificates. The statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:</p> <ul style="list-style-type: none"> <li>a) the amount due in respect of Milestones certified achieved by the Engineer under each Cost Centre;</li> <li>b) any amounts to be added and deducted for the advance payments and recovery thereof;</li> <li>c) any other additions or deductions is due and approved by the Engineer in accordance with the Contract; and</li> <li>d) The deduction of the amounts certified in all previous Interim Payment Certificates.</li> </ul> <p>The Contractor shall not submit more than one request for interim payment per month.</p> <p>If any Milestone is not achieved by the end of the month in which it is scheduled to be achieved, the Engineer shall suspend the payment relating to the Cost Centre in which the Milestone is included.</p> <p>Payments suspended under this Clause shall be resumed by being included in the next application for interim payment made after the Milestone is achieved.</p>
11.4.2	<p>In case of 'Lump Sum' or Item rate' contracts with payment schedule, the contractor shall be entitled to be paid from time to time, normally once in a calendar month, by way of 'on account' bill as per the payment schedule indicated in Bill of Quantity (BOQ) or as finally approved by the Engineer.</p>

**Contractor**

**Procuring Entity / Employer**

**11.5 Issue of Interim Payment Certificates**

No amount will be certified or paid until the Employer has received, and approved, the Performance security and the parent Company Undertakings and Guarantees in accordance with Sub-Clause 4.2. Thereafter, the Engineer shall, within 21 days of receiving a statement and supporting documents, deliver to the Employer, with a copy to the Contractor, an Interim Payment Certificate showing the amount which the Engineer considers to be due; if no payment is considered to be due, the Engineer shall promptly notify the Contractor accordingly. Where only a part of the payment applied for is disputed, payment certificate shall be issued for the undisputed amount.

The Engineer shall have the power to omit from any of the contractor's requests for payment the value of any work executed or Materials supplied or services rendered, with which he may for the time being be dissatisfied and for that purpose and for any other reason which to him may seem proper, may delete, correct or modify the sum(s) previously certified by him as being due to the Contractor.

**11.6 Payment - Interim and Final**

Unless otherwise stated in Special Conditions of Contract,

- a) After preliminary scrutiny and certification by the Engineer, payment of 80% of the certified interim amount shall be made by the Employer within 14 days. The amount certified shall account for all deductions, including statutory deductions, recoveries for advances and any amounts due from the Contractor. The balance 20% shall be paid within 28 days, from the date of the preliminary certification of the bill by the Engineer.
- b) Next 80% interim payment shall be made only after 100% payment of preceding interim payment certified has been completed.
- c) The Employer shall pay the amount certified in the Final Payment Certificate within 56 days from the date of issue of the Certificate.

Payments shall be made into a bank account, nominated by the Contractor in Indian rupees in a bank in India unless otherwise permitted in Special Conditions of Contract. If payments are to be made in more than one currency, separate bank accounts may be nominated by the Contractor for each currency, and payments shall be made by the Employer accordingly.

**11.7 Statement at Completion**

Not later than 60 days after the issue of the Taking Over Certificate for the whole of Works, the Contractor shall submit, to the Engineer, three copies of a statement at completion with supporting documents, showing in detail, in the form approved by the Engineer under Sub-Clause 11.4.

- a) the final value of all work done in accordance with the Contract, up to the date stated in such Taking Over Certificate,
- b) any further sums which the Contractor considers to be due, and
- c) an estimate of amounts which the Contractor considers will become due to him under the Contract.

The estimated amounts shall be shown separately in such statement at completion. The Engineer shall certify payment under Sub-Clause 11.5.

**11.8 Application for Final Payment Certificate**

Not later than 56 days after the issue of the Performance Certificate, the Contractor shall submit to the Engineer three copies of a draft final statement with supporting documents showing in detail, in a form approved by the Engineer:

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- a) the value of all work done in accordance with the Contract, and
- b) any further sums which the Contractor considers to be due to him under the Contract or otherwise.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the Final Statement as agreed.

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Employer shall pay those parts of the draft final statement as certified by the Engineer as not being in dispute. The remainder of the dispute may then be resolved under Clause 17, in which case the Contractor shall then prepare and submit to the Engineer a Final Statement in accordance with the outcome of the dispute.

### 11.9 Retention

5% retention is applicable to all running account bills. Half of the retention money will be released after the successful completion of work and balance is payable Only after the end of Defect Liability Period.

### 11.10 Issue of Final Payment Certificate

The Engineer shall issue to the Employer, with a copy to the Contractor, the Final Payment Certificate within 28 days after receiving the Final Statement and written discharge in accordance with Sub-Clause 11.7 and 11.8, stating:

- a) the amount which is finally due, and
- b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the Balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clauses 11.8 and 11.9, the Engineer shall request the Contractor to do so. If the Contractor fails to make such an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he considers to be due.

### 11.11 Cessation of Employer's Liability

In respect of any matter or thing arising out of (or in connection with) the contract or execution of the Works before the issue of the Taking over Certificate for the whole of the Works, the Employer shall not be liable to the Contractor unless the Contractor shall have included a claim for it in his Statement at Completion described in Sub-Clause 11.7. For any such matter or thing arising after the issue of the Taking Over Certificate for the whole of the Works, the Employer shall not be liable to the Contractor unless the Contractor shall have included a claim for it in his Final Statement.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 11.12 Calculations of Payments in Foreign Currency

All payments made by the Employer pursuant to the terms of the Contract shall be in the currency or currencies specified in the Contract. Wherever any sum in a foreign currency has to be converted into Indian Rupees for any purpose, the exchange rate to be employed for such conversion shall be the selling rate of exchange at the close of business of the State Bank of India 28 days before the latest date of submission of Tenders.

### 11.13 Round Off

In every payment to the Contractor, sums of less than fifty paise shall be omitted and sums of fifty paise and more up to one rupee shall be reckoned as one rupee.

### 11.14 Payment by Cheque and E- Payment

All payments to the Contractor will be made by cheque or "E-Payment" as desired by the Employer.

### 11.15 Tax Deduction at Source

Tax deductions will be made at source as per statutory requirement from every payment made to the Contractor at rates notified from time to time.

### 11.16 Production of Vouchers

- i) The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying or ascertaining the cost of execution of this Contract or ascertaining the Materials supplied by the Contractor are in accordance with the Specifications laid down in the Contract. The Engineer's decision on the question of relevancy of any documents, information or returns shall be final and binding on the parties.
- ii) If any part or item of the work is allowed to be carried out by a sub- Contractor, assignee or any subsidiary or allied firm, the Engineer shall have power to secure the books of such sub-Contractor, assignee or any subsidiary or allied firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or orders.

### 11.17 Withholding and Lien for Sums Claimed

- i) The Employer shall have lien over all or any moneys that may become due and payable to the Contractor under the Contract, and / or over the deposit of Performance Security or other amount or amounts made under the Contract and which may become payable to the Contractor.
- ii) And further, unless the Contractor pays and clears immediately on demand any claim of the Employer, the Employer shall at all times be entitled to deduct the amount of the said claim from the moneys, securities and / or deposits which may have become or will become payable to the Contractor under these presents, or under any other Contract or transaction whatsoever between the Employer and the Contractor even if the matter stands referred to Arbitration. The Contractor shall have no claim for any interest or damage whatsoever in respect of any amounts withheld or treated as withheld under the lien referred to above and duly notified as such to the Contractor.

### 11.18 Signature on Receipts for Payment

Every receipt of payment to Contractor including refund of the Performance Security shall be signed by the person authorized to do so on his behalf. In the event of death of any of the Contractor's partners in case the Contractor is a partnership firm, during the currency of the Contract, it is hereby expressly agreed that every receipt by any one of surviving Contractor's partners, shall, if so signed as aforesaid, be a good and sufficient discharge as aforesaid, provided that nothing in

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

<p>this Clause shall be deemed to prejudice or affect any claim, which the Employer may hereafter have against the legal representatives of any Contractor's partner so dying, for or in respect of breach of any of the conditions of the Contract. Provided also that nothing contained in this clause shall be deemed to prejudice or affect the respective rights and obligations of the Contractor's partners, or of the legal heirs / representatives of any deceased Contractor / partner inter se.</p>	
<b>11.19 Post Payment Audit</b> <p>It is an agreed term of the Contract, that the Employer reserves to himself the right to carry out a post payment audit and / or technical examination of the Works, and the Final bill including all supporting vouchers, abstracts, etc., and to make a claim on the Contractor for the refund of any excess amount paid to him, if as a result of such examination, any over-payment to him is discovered to have been made in respect of any work done or alleged to have been done by the Contractor, under the Contract. If any under-payment is discovered, the same shall be paid by the Employer to the Contractor. Such payments or recoveries, however, shall not carry any interest.</p>	
<b>11.20 Recovery of Money due to the Employer</b> <p>expenses, debts, or sums for which the Contractor is liable to the Employer under any provision of the Contract may be deducted by the Employer from monies due to the Contractor under the Contract (including, without limitation, liquidated damages) and the Employer shall have the power to recover any balance not so deducted from monies due to the Contractor under any other contract between the Employer and the Contractor.</p> <p>When the Contractor has assigned to a third party the right to receive monies due, or, to become due, under the Contract to the Contractor or charged such monies in favour of a third party, the Employer's right to deduct damages (including without limitation liquidated damages), costs, charges, expenses, debts or sums for which the Contractor is liable to the Employer from monies due to the Contractor under the Contract shall be limited to the right expressed above. The contractor shall not assign his right to receive the money due to a third party without a written consent from the Employer.</p> <p>All damages (including, without limitation, liquidated damages), costs, charges,</p>	
<b>12. VARIATIONS</b>	
<b>12.1 Right to Vary</b> <p>All Variations shall be recorded in a written instruction from the Engineer either as a Contractor's Variation or as an Employer's Variation, and shall not be implemented by the Contractor without such an instruction in writing from the Engineer. No Variation shall in any way vitiate or invalidate the Contract. The Contractor shall not make any alteration and/or modification of the Works, unless and until the Engineer instructs or gives consent to a Variation. If the Construction and/or Manufacture Documents or Works are not in accordance with the Contract, the rectification shall not constitute a Variation.</p>	
<b>12.2 Contractors Variation</b>	
<b>12.2.1 Variation Proposals</b>	<p>The Contractor may submit to the Employer, in writing at its own cost, any engineering proposal as contractor's variation for modifying the Employer's Requirements, provision of additional land, access or feasibility over and above that is provided in the Contract for the purpose of saving in time, construction or manufacture costs. Such variation proposal shall not impair the essential character, functions or characteristics or the Work, including service life, economy of operation, ease of maintenance, desired appearance, or design and safety standards.</p> <p>The Contractor shall provide his variation proposal in a time limit prescribed by the Engineer. The Engineer's decision in this regard shall be communicated to the Contractor within a reasonable period of time. If by any reason the time limit specified by the Engineer is exceeded, the proposal may not be considered. The</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	decision of the Engineer in this regard shall be final and binding.
<b>12.2.2 Contents of Variations</b>	<p>If the Employer requires or accepts it, and if the Contractor wants to proceed with the proposal, the Contractor must provide (at no cost to the Employer) a detailed report prepared by a consultant acceptable to the Employer and which shall include:</p> <ul style="list-style-type: none"> <li>(a) a general description of the original Contract requirements for the Works and the proposed changes</li> <li>(b) a detail of all the proposed modifications to the drawings and specifications</li> <li>(c) a detail of all Work and goods affected by the value engineering proposal</li> <li>(d) a detailed estimate of the construction cost based on the original Contract requirements and based on the proposed changes</li> <li>(e) any resultant time extensions or reductions for the Contract</li> <li>(f) Statement to the extent of minimum saving expected. The Contractor's cost of preparing the variation proposal shall be excluded in determining the estimated net savings in construction costs.</li> </ul>
<b>12.2.3 Employer Review</b>	<p>The Employer may in his sole discretion, accept or reject the contractor's variation or any part thereof and determine the estimated net saving in the construction cost. The Employer shall not be liable for delays or damages to the Contractor due to any failure of the Employer to accept or act upon any such variation proposal submitted pursuant to this Clause. Once, the Employer or the Engineer rejects the contractor's variation during proposition due to any reason, it shall not be pursued by Contractor in any other form.</p>
<b>12.2.4 Amendments- Employer Issuance</b>	<p>If the variation proposal is acceptable to the Employer/Engineer in whole or in parts, it will accept by execution of an amendment. Such amendment shall identify all the changes in the specifications, Contract Period etc. and shall specify net savings on construction costs which shall be adjusted in the contract value by the Employer.</p>
<b>12.2.5 Contractor's Acceptance and Payment</b>	<p>The Contractor shall either accept or reject any proposed amendment executed by the Engineer pursuant to this section within 5 working days of its receipt date from the Employer. If the Contractor does not reject the same in the period stipulated above, the amendments shall be deemed to be accepted by the Contractor and shall become a variation to the Contract. The Contractor's acceptance shall be unconditional and the contract value / price shall be adjusted by the amount of saving due to the variation.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 12.3 Employer's Variations

If the Engineer requests a proposal, prior to instructing a Variation which may be for additional work or alteration in the work on deletion / reduction in the scope of work, the Contractor shall submit at his own cost within 14 days or such period as the Engineer may allow of the receipt of such request of the Engineer.

- (a) a description of the proposed design and/or work to be performed and a programme for its execution,
- (b) The Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 4.13, and
- (c) the Contractor's proposal for adjustment to the Contract Price, Time for Completion and/or modifications to the Contract.

### 12.4 Variation Procedure

The Engineer shall, as soon as practicable after receipt of proposals under sub-clauses 12.2 and / or 12.3, respond with approval, rejection or comments.

If the Engineer instructs or approves a Variation, he shall proceed in accordance with Sub-Clause 3.5 to agree or determine adjustments to the Contract Price, Time for Completion and Schedule of Payments.

After receipt of proposal, it will be the prerogative of the Employer, whether to Instruct and proceed ahead with the variation or drop the proposal in part or full. In that case, no cost of preparing and submitting the proposal will be payable to Contractor. In case, the design part of variation has been completed on submission of same to the Engineer, the Employer decides to abandon the variation, only cost for design to the extent of work done will be paid to the Contractor.

### 12.5 Variation in Bill of Quantities

- i) The quantities of items shown in the Bill of Quantities are approximate, and liable to vary during the actual execution of the work. Some items/group of items may have to be altered, added or omitted. The Contractor shall be bound to carry out and complete the stipulated work as instructed by the Engineer, irrespective of the magnitude of variations including additions, alterations or omissions in the Bill of Quantities, individual items or group of items, specified in the Bill of Quantities.
- ii) Such variations shall be paid as follows:
  - (a) At the accepted rates of the Contract for Positive variation in quantities to the extent of 25%, except in the case of foundation works. Unless otherwise specifically provided for in the Bill of Quantities or elsewhere in the Contract, the variation of 25% shall be applicable to a group of items mentioned therein and not to individual items. In case of variation in quantities on minus side, contract rates will be payable for executed quantities.
  - (b) In case of foundation work, no variation limit applies and Contractor shall carry out the Work, at rates stipulated in the Contract irrespective of any variation.
  - (c) In case of earth work, the aforesaid variation limit of 25% shall apply to the gross quantity of earth work and variation in the quantity of individual classifications of soil will not be subject to this limit where any variation can take place.
  - (d) For items against which the quantity given in the Bills of Quantities is "if or as required", there shall be no increase/decrease of rates whatever be the quantity finally executed.
  - (e) Variation in the quantity of items individually costing upto 1% of the total contract value, shall be payable at the rates stated in the Contract. Notwithstanding the

Contractor

Procuring Entity / Employer



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

magnitude of variation upto 2% of the original Contract Value for each item.

- (f) In case the variation in individual items or the group of items as stipulated above, is more than 25% on plus side, the rate for the varied quantity beyond 25% shall be negotiated between the Engineer and the Contractor and mutually agreed rates arrived at before actual execution of the extra quantity.
- (g) In case Engineer introduces an item for which the Contract does not contain any rates or prices applicable to the varied Works, the rate of such items shall be derived, wherever possible, from rate for similar items available in the Bill of Quantities of the accepted Tender. In case this is not possible, the rate may be:
  - i) Cost of Materials at current market price, as actually utilised in the final finished Permanent Works, including a reasonable percentage for wastage and transportation.
  - ii) Cost of enabling works if any (unless provided for separately) worked out on the above basis but with less stringent quality. Specifications minus salvage value of serviceable material released after completion of work and cost of material released as scrap.
  - iii) Cost of labour actually used at the site of work at rates under Payment of Minimum Wages Act for the area of work for each category of worker, further enhanced by a percentage of 10% of the aforesaid rates to account for labour not directly utilised at Site and other ancillary and incidental expenses on labour.
  - iv) Hire charges for Plant & Machinery, scaffolding, shuttering, forms, etc., required to be used at the site of the work. The tools used by the various trades shall not be counted as Plant & Machinery for this purpose.
  - v) An amount of 20% of items (i), (ii), (iii) and (iv) above to allow for Contractor's overheads, profits and corporate taxes. This percentage shall also apply to estimated cost of Materials supplied free to the Contractor.
  - vi) In all cases where extra items of work are involved, for which there are no rates in the accepted Bill of Quantities the Contractor shall give a notice to the Engineer, of at least 7 days before the need for their execution arises.
- (h) In the event of disagreement in respect of items (f) and (g) above, the Engineer shall fix such rates of price as are, in his opinion appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on account payments to the Contractor. Alternatively, in the event of disagreement, the Contractor shall have no claim to execute extra quantities/new items and the Engineer shall be free to get such additional quantities beyond 25% new items executed through any other agency. However, if the Engineer or the Employer so directs the Contractor shall be bound to carry out any such additional quantities beyond the limits stated above original quantities and or new items and the disagreement or the difference regarding rates to be paid for the same shall be settled in the manner laid down under the conditions for the settlement of dispute.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### 12.6 Payment in Applicable Currencies

If the Contract provides for payment of the Contract Price in more than one currency, and an adjustment is agreed or fixed as stated above, the amount payable in each of the applicable currencies shall be specified when the adjustment is agreed or fixed. In specifying the amount in each currency, the Contractor and the Engineer (or, failing agreement, the Engineer) shall take account of the actual or expected currency proportions of the Cost of the varied work, without being bound by the proportions of various currencies specified for payment of the Contract Price.

## 13. TERMINATION OF THE CONTRACT

### 13.1 Notice to Contractor

If the Contractor fails to carry out any of his obligations, or if the Contractor is not executing the Works in accordance with the Contract, the Engineer may give notice to the Contractor requiring him to make good such failure and remedy the same within such time as the Employer / Engineer may deem to be reasonable.

### 13.2 Termination of Contract due to Contractor's Default

#### 13.2.1 Leading Conditions to Termination of Contract

The Employer shall be entitled to terminate the Contract if the Contractor or any one of its constituents,

- (a) fails to comply with a notice under Sub clause 13.1
- (b) abandons or repudiates the Contract
- (c) without reasonable excuse acceptable to the Engineer, fails to commence the Works in accordance with the Contract
- (d) sub contracts the whole of the Works or assigns the Contract without approval of the Employer
- (e) becomes bankrupt or insolvent or goes into liquidation except voluntary liquidation for the purpose of amalgamation or reconstruction
- (f) persistently disregards instructions of the Engineer or contravenes any provisions of the Contract, or
- (g) fails to adhere to the agreed programme of work by margin of 10% of the stipulated period or 21 days, whichever is earlier, or fails to complete the Works or parts of the Works within the stipulated or extended period of completion, or is unlikely to complete the whole Work or part thereof within time because of poor record of progress; or
- (h) fails to remove materials from the Site, or pull down and replace work, after receiving notice from the Engineer to the effect that the said materials or Works have been condemned or rejected, or
- (i) fails to take steps to employ competent and/or additional staff and labour, or
- (j) fails to afford the Engineer or his representative proper facilities for inspecting the Works or any part thereof, or

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	(k) indulges in corrupt or fraudulent practices as explained in Clause 4.33
13.2.2	In any one of these events or circumstances, the Employer may upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in case of sub-paragraph (e) or (k), the Employer may by notice of 7 days terminate the Contract immediately.
13.2.3	For the purpose of sub para (c) above, this clause, reasonable excuse shall be one, which in the opinion of the Engineer has resulted from, Any Circumstance which  - is beyond the employer's or contractor's control and  - made the failure unavoidable and it is evidenced by the Contractor to the satisfaction of the Engineer that the failure was remedied without unreasonable delay once that obstacle was out of the way.
13.2.4	In case of sub para (g), the Engineer at its sole discretion may terminate only part of the contract also by taking out some part of the total scope of work and may complete or arrange for any other entity through the process of open/limited/single tender or by calling quotations, to do so at the risk and cost of the contractor.
13.2.5	The Employer's decision to terminate the Contract shall not prejudice any other rights of the Employer under the Contract.
13.2.6	On termination of contract due to contractor's default the performance security shall be forfeited by encashing the bank guarantee and the balance work shall be got done independently without risk and cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a partnership firm, then every member/partner of such JV or partnership firm shall be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.
13.2.7	The Engineer shall not make a claim under the Performance Security except for amounts to which the CSML is entitled under the contract (Not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of  i) Failure by the contractor to extend the validity of the Performance Security as described herein above, in which event the Engineer may claim the full amount of the Performance Security.  ii) Failure by the contractor to pay CSML any amount due, either as agreed by the contractor or determined under any or the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer.  iii) The contractor being determined or rescinded under

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	provision of the GCC the Performance Security shall be forfeited in full and shall be absolutely at the disposal of the CSML
13.2.8 <b>Valuation at the date of Termination</b>	The Engineer shall, as soon as possible after termination under Sub-Clause 13.2.1, determine and advise the Contractor of the value of the Construction and/or Manufacture Documents, Plant, Materials, Contractor's Equipment and works and all sums then due to the Contractor as at the date of termination.
13.2.9 <b>Payment Termination after</b>	<p>After termination under Sub-Clause 13.2.1, the Employer shall not be liable to make any further payments to the Contractor until the costs of design, manufacture, execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established.</p> <p>The Employer shall be entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor under Sub-Clause 13.2.8. If there are no such extra costs, the Employer shall pay any balance to the Contractor.</p>
13.2.10 <b>Non-Exercise of Power not to Constitute Waiver</b>	Provided always that in case any of the powers conferred upon the Employer by Sub-clause 13.1 and Sub-clause 13.2.1 above, shall have become exercisable, and the same may not have been exercised, the non-exercise thereof shall not constitute waiver of any of the conditions thereof.
13.3 Default of Employer	
<b>13.3.1 Notice by Contractor</b>	<p>In the event of the Employer:</p> <p>(a) failing to pay the Contractor, without reasonable cause, the amount due under any certificate of the Engineer within 56 days after the expiry of the time stated in Sub-Clause 11.5 within which payment has to be made, subject to any deduction that the Employer is entitled to make under the Contract or,</p> <p>(b) becoming bankrupt or, being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, then the Contractor may give notice requiring the Employer to remedy the default within 28 days after receipt of the notice. If the Employer fails to remedy the default or fails to propose steps reasonably acceptable to the Contractor to do so and in that case, the Contractor may terminate the Contract after issue of 14 days' notice to the Employer with a copy to the Engineer. In this case, the Contractor shall be compensated as per Sub clause 13.3.4</p> <p>The Engineers decision on the amount payable on this account shall be final and binding.</p>
<b>13.3.2 Contractor's</b>	The Contractor may, if the Employer fails to pay the Contractor

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

<p><b>Entitlement to Suspend the Work</b></p>	<p>the amount due under any certificate of the Engineer within 56 days after the expiry of the time stated in Sub-Clause 11.6, within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend work or reduce the rate of work.</p> <p>If the Contractor suspends work or reduces the rate of work in accordance with the provisions of this Sub-Clause and thereby suffers delay or incurs costs the Engineer shall, after due consultation with the Employer and the Contractor, determine:</p> <ul style="list-style-type: none"> <li>a) any extension of time to which the Contractor is entitled under sub- clause-8.4, and</li> <li>b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.</li> </ul>
<p><b>13.3.3 Cessation of Work by Contractor</b></p>	<p>After termination under Sub-13.3.1, the Contractor shall:</p> <ul style="list-style-type: none"> <li>(a) cease all further work, except for such work as may be necessary and instructed by the Engineer for the purpose of making safe or protecting those parts of the Works already executed, and any Work required to leave the Site in a clean and safe condition,</li> <li>(b) hand over all Construction and/or Manufacture Documents, Plant, and Materials for which the Contractor has received payment,</li> <li>(c) hand over those parts of other Works executed by the Contractor up to the date of termination, and</li> <li>(d) remove all Contractor's Equipment which is on the Site and repatriate all his staff and labour from the Site.</li> </ul> <p>Any such termination shall be without prejudice to any other right of the Contractor under the Contract.</p>
<p><b>13.3.4 Payment Termination on</b></p>	<p>After termination under Sub-Clause 13.3.1 the Employer shall return the Performance security, and shall pay the Contractor an amount calculated and certified in accordance with the following conditions:.</p> <ul style="list-style-type: none"> <li>(a) The value of approved materials actually brought to the site and reasonably required to execute the works during next three months, as per approved programme, and</li> <li>(b) Value of work completed up to date by the contractor at rates specified in the Contract, after taking into account any deductions, retentions, set off.</li> </ul> <p>The payment as above shall be full compensation for termination under this clause and the Contractor has no claim for damages or other entitlements whether under the contract or otherwise.</p>
<p><b>13.3.5</b></p>	<p>In case termination/foreclosure of the Contract under whatsoever circumstances, any remaining tools, plants, equipments and surplus materials of Employer with contractor will be returned to</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

the Employer in good condition at Employer's depot at Contractor's cost. In case of the failure of the contractor to do so, the Employer will be entitled to recover their cost from the contractor from the amount becoming due to the contractor or from any other money due in any other contracts. The decision of the Engineer of the amount to be recovered will be final decision and full credit at rates initially charged to the contractor shall be allowed for such materials. Similarly the Employer shall be entitled to recover the cost of the unreturned material, plant equipment and tools from the contractor where such material have been supplied free of cost and plant, equipment and tools free of cost or on lease basis to the contractor as stipulated in the Conditions of Contract.

Contractor

Procuring Entity / Employer

**14. RISK AND RESPONSIBILITY**

**14.1 Indemnity**

The Contractor shall indemnify and hold harmless the Employer, the Engineer, the Designated Contractors, representatives and employees from and against all actions, suits, proceedings, claims, damages, losses, expenses and demands of every nature and description, by reasons of any act or omissions of the Contractor, his representative or his employees in the execution of the Works, including professional services provided by the Contractor or in the guarding the same.

These indemnification obligations shall include but not be limited to claims, damages, losses, damage proceedings, charges and expenses which are attributable to:

- (a) sickness, or disease, or death of, or injury to any person; and
- (b) loss of, or damage to, or destruction of any property (other than the Works) including consequential loss of use; and
- (c) loss, damage or costs arising from the carriage of Plant, Rolling Stock and Materials and/or ownership or chartering of marine vessels by the Contractor, or any sub-contractor of any tier.

The Contractor shall also indemnify and save harmless the Employer from and against all claims and proceedings on account of infringements of patents rights, design, trademark name etc. as detailed out in clause 5.8.

All sums payable by way of compensation or damages under these conditions shall be considered reasonable compensation payable to the Employer, without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained. The decision of the Engineer as to compensation claimed shall be final and binding.

**14.2 Contractor's Care of the Works**

The Contractor shall take full responsibility for the care of the Works, or any part thereof, including full responsibility for the care of any work being manufactured, or stored off-Site for inclusion in the Works, or in the course of transportation to the Site, and for the care of Contractor's Equipment, Temporary Works, Plant, Rolling Stock, and any other Material, whatsoever, on the Site or delivered to or placed on the Site in connection with, or for the purpose of the Works.

The Contractor shall take this responsibility from the Commencement Date until the date of issue of the Taking Over Certificate, when responsibility shall pass to the Employer. If the Engineer issues a Taking Over Certificate for any Section or part of the Works, the Contractor shall cease to be responsible for the care of that Section or part from the date of issue of such Taking Over Certificate when responsibility shall pass to the Employer.

The Contractor shall take responsibility for the care of any outstanding work which is required to be completed prior to the expiry of the Contract Period, until the Engineer confirms in writing that such outstanding work has been completed.

If any loss or damage happens to the Works, any other property or person, arising from any cause other than the Employer's risks listed in Sub-Clause 14.3, during the period for which the Contractor is responsible, the Contractor shall rectify such loss or damage, at his cost, so that the Works conform with the Contract or at the option of the Employer, will pay or allow to the Employer the cost of rectifying such loss or damage. Notwithstanding such loss or damage, the Contractor shall proceed with the execution of works in all respects in accordance with the contract and the Engineer's instructions. The Contractor shall also be liable for any loss or damage to the Works caused by any operations carried out by the Contractor after the date of issue of the Taking Over Certificate.

**14.3 Employer's Risk**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

The Employer's risks of loss or damage to physical property in India and of death and personal injury occurring in India in consequence of the performance of obligations under the Contract are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, or military or usurped power, or civil war, within India
- (c) riot, commotion or disorder by persons unless solely restricted to or caused by employees of Contractor or of subcontractors currently or formerly engaged in the Works
- (d) Ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor may be responsible for the use of any radio-active material,
- (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, and
- (f) use or occupation by the Employer of any part of the Works, except as may be specified in the Contract.

#### 14.4 Consequences of Employer's Risk

If an Employer's risk results in loss or damage, the Contractor shall promptly notify the Engineer and shall rectify this loss or damage to the extent required by the Engineer.

If the Contractor suffers delay and/or incurs cost from rectifying this loss or damage, the Contractor shall give notice to the Engineer and shall be entitled to claim:

- (a) extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4, and
- (b) Amount of such cost, which may be included in the Contract Price at the discretion of the Engineer.

#### 14.5 Contractor's Risk

The Contractor's risks are all risks other than the Employer's risks given in sub clause 14.3

**Contractor**

**Procuring Entity / Employer**



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

### 14.6 Limitation of Liability

Except as provided otherwise in these Conditions, neither party shall be liable to the other party for loss of use of any Works, loss of profit, loss of any Contract or any other indirect or consequential loss or damage which may be suffered by the other party in connection with the Contract. The total liability of the Contractor to the Employer under the Contract shall not exceed the Contract Price. Except that this Sub-Clause shall not limit the liability of the Contractor:

- (a) under Sub-Clauses 4.18, 4.19, 5.7, 8.6, and Clauses 7.10 and 7.11
- (b) under any other provisions of the Contract which expressly impose a greater liability,
- (c) in cases of fraud, wilful misconduct or illegal or unlawful acts, or
- (d) in cases of acts or omissions of the Contractor which are contrary to the most elementary rules of diligence which a conscientious Contractor would have followed in similar circumstances.

## 15. INSURANCE

### 15.1 Professional Indemnity Insurance

The Contractor shall effect and maintain professional indemnity insurance, preferably in the name of CSML, for the amount in Indian Rupees stipulated in Contract data in respect of any design of the Works to be carried out by, or on behalf of the Contractor. This insurance, which shall ensure the Contractor's liability by reason of professional negligence and errors in the design of the works, shall be valid from the date of commencement of Works, until 5 years after the date of issue of Performance Certificate.

The Engineer will not issue Final Payment Certificate until the Contractor has produced evidence that coverage of the professional indemnity insurance has been provided for the aforesaid period.

### 15.2 Insurance for Works and Contractor's Equipment

The Contractor shall insure the Plant, Materials and Works in the joint names of the Employer, the Contractor and Sub-contractors (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-Clause 14.3 sub paragraphs (a), (b), (d) and (e). Such insurance shall be for a limit of not less than the full replacement cost (including profit) and shall also cover the costs of demolition and removal of debris. Such insurance shall be in such a manner that the Employer and the Contractor are covered from the commencement date until the date of issue of the Taking Over Certificate for the whole of Works. The Contractor shall extend such insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking Over Certificate, and for loss or damage occasioned by the Contractor or Sub-contractors in the course of any other operations (including Clauses 7.10, 7.11 and 10).

The Contractor shall insure the Contractor's Equipment against all risks in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-Clause 14.3 sub- paragraphs (a), (b), (d) and (e). Such insurance shall be for a limit of not less than the full replacement value (including delivery to Site). Such insurance shall be in such a manner that each item of equipment is insured while it is being transported to the Site and throughout the period it is on or near the Site.

### 15.3 Insurance against injury to Persons and Damage to Property

The Contractor shall insure against liability to third parties in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 15.2) or to any person (except persons insured under Sub-Clause 15.4), which may arise out of the performance of the Contract and occurring before the issue of the Performance Certificate. Such insurance shall be at least for the amount specified in the Appendix to Form of Tender / SCC.

Contractor

Procuring Entity / Employer

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

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**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### 15.4 Insurance for Workers

The Contractor shall effect and maintain insurance against losses and claims arising from the death or injury to any person employed by the Contractor or any Sub-contractor (wherever applicable) in such a manner that the Employer and the Engineer are indemnified under the policy of insurance. For Sub-contractor's employees (wherever applicable), such insurance may be effected by the Sub-contractor, but the Contractor shall be responsible for compliance with this Clause.

### 15.5 General Requirements for Insurances

The Contractor shall, within the respective periods stated in the Appendix to Form of Tender /SCC (calculated from the Commencement Date), submit to the Employer:

- a) evidence that the insurances described in this Clause have been effected, with an Indian Insurance Company, and
- b) copies of the policies for the insurances described in Sub-Clause 15.2, 15.3 and 15.4.

When each premium has been paid, the contractor shall submit copy of receipts to the employer. The contractor shall also, when providing such evidence, policies and receipts to the employer, notify the engineer of so doing.

The contractor shall effect all insurances for which he is responsible with insurers and in terms approved by the employer. Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify such loss or damage. Payments received from insurers shall be used for the rectification of such loss or damage.

The contractor (and, if appropriate, the employer) shall comply with the conditions stipulated in each of the insurance policies. The contractor shall make no material alteration to the terms of any insurance without the prior approval of the employer. If an insurer makes (or purports to make) any such alteration, the contractor shall notify the employer immediately.

If the contractor fails to effect and keep in force any of the insurances required under the contract, or fails to provide satisfactory evidence, policies and receipts in accordance with this sub-clause, the employer may, without prejudice to any other right or remedy, effect insurance for the coverage relevant to such default, and pay the premiums due. In such cases the premium paid by the employer plus overheads (equal to 50% of the premium paid) shall be recoverable from the contractor by the employer, and may be deducted by the employer from any monies due, or to become due, to the contractor or recover the same as debt due from the contractor. The contractor shall not dispute the amount of premium paid by the employer or the overhead charges thereon.

Nothing in this clause limits the obligations, liabilities or responsibilities of the contractor or the employer, under the other terms of the contract or otherwise. Any amount not insured or not recovered from the insurers shall be borne by the contractor.

The Contractor shall submit to the Engineer, the details of all claims made with the insurer and claims accepted by the insurer or any other details as required by the Engineer on monthly basis.

## 16. FORCE MAJEURE

### 16.1 Definition of Force Majeure

In this Clause, "force majeure " means an event beyond the control of the Employer and the Contractor, which makes it impossible or illegal for a party to

- a) act of God;
- b) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, mobilisation, requisition, or embargo;

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- c) rebellion, revolution, insurrection, or military or usurped power, or civil war;
- d) contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly;
- e) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Sub-contractors currently or formerly engaged on the Works.

If a party considers that it may be affected by Force Majeure, the party shall promptly notify the other party and Engineer of such Force Majeure within 21 days of such occurrence. If neither party issues any notice regarding the event within 21 days of its occurrence, the said event shall be deemed not to have occurred and the Contract shall continue to have effect as such.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

16.2	<b>Effect of Force Majeure Event</b> Neither the Employer nor the Contractor shall be considered in default or in contractual breach to the extent that performance of obligations is prevented by a Force Majeure event which arises after the date of Notice to Proceed Upon the occurrence of such Force Majeure, the affected party shall endeavour to continue to perform its obligations as far as reasonably practicable.
16.3	<b>Contractor's Responsibility</b> If affected by such Force Majeure, the Contractor shall promptly notify the Engineer of any proposals for overcoming the consequences of the Force Majeure, including any reasonable alternative means for performance, but shall not carry out these proposals without the consent of the Engineer.
16.4	<b>Employer's Responsibility</b> If affected by such Force Majeure, the Employer shall promptly notify the Engineer and the Contractor of any proposals for overcoming the consequences of the Force Majeure.
16.5	<b>Payment to Contractor</b> If the Works shall suffer loss or damage due to such Force Majeure, the Contractor shall be entitled to have included, in an Interim Payment Certificate, the Cost of work executed in accordance with the Contract.
16.6	<b>Resumption of Work</b> The obligations under the Contract shall be resumed as soon as practicable after the event has come to an end or ceased to exist.  In case of doubt or dispute, whether a particular occurrence should be considered an "event" as defined under this clause, the decision of the Engineer shall be final and binding.  Works that have already been measured shall be paid for by the Employer even if the same is subsequently destroyed or damaged as a result of the event. The cost of rebuilding or replacing any work that has been measured shall be borne by the Employer.
16.7	<b>Optional Termination, Payment and Release</b> Irrespective of any extension of time, if a Force Majeure occurs and its effect continues for a period of 6 months, after notice has been given under Sub-Clause 16.1, either party may give to the other party a notice of termination of the Contract which shall take effect in 28 days after the notice is given. Unless at the end of 28 days period the effect of the Force Majeure has ceased, the Contract shall terminate upon that date. Otherwise, the Contract shall remain in effect.  The Contractor shall be paid fully for the work done under the Contract, but not for any defective work or work done which has been destroyed or damaged before its measurement. The Employer shall have the option to take over any Plant and Materials lying at site, at rates provided for in the Contract, failing that, as per rates, which are determined to be fair and reasonable by the Engineer.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

16.8	<p>Release from Performance under the Law</p> <p>If under the law of the Contract the Employer and the Contractor are released from further performance, the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 16.7, if the Contract had been terminated under that Sub-Clause.</p>
<b>17. CLAIMS, DISPUTES, CONCILIATION AND ARBITRATION</b>	
17.1	<p>Procedure for Claims</p> <p>If the Contractor intends to claim any additional payment under any clause of these Conditions or otherwise, the Contractor shall give notice to the Engineer as soon as possible and in any event within 28 days of the start of the event giving rise to the claim.</p> <p>The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at any other location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer shall, on receipt of such notice, inspect such records and may instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all such records, and shall (if instructed) submit copies to the Engineer.</p> <p>Within 28 days of such notice, or such other time as may be agreed by the Engineer, the Contractor shall send to the Engineer an account, giving detailed particulars of the amount and basis of the claim. Where the event giving rise to the claim has a continuing effect, such amount shall be considered as interim. The Contractor shall then, at such intervals as the Engineer may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further particulars. Where interim accounts are sent to the Engineer, the Contractor shall send a final account within 28 days of the end of the effects resulting from the event.</p> <p>If the Contractor fails to comply with this Sub-Clause, he shall not be entitled to claim any additional payment.</p>
17.2	<p>Payment for Claims</p> <p>The Contractor shall be entitled to have included in any Interim Payment Certificate such amount for any claim as the Engineer considers due, after taking approval from the Employer. If the particulars supplied are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment for such part of the claim as has been substantiated.</p>
17.3	<p>No legal action Till Dispute Settlement Procedure is Exhausted</p> <p>Any and all Disputes shall be settled in accordance with the provisions of Clause 17. No action at law concerning or arising out of any Dispute shall be commenced unless and until all applicable Dispute resolution procedures set out in Clause 17 shall have been finally exhausted in relation to that Dispute or any Dispute out of which that Dispute shall have arisen with which it may be or may have been connected.</p>
17.4	<p>Notice of Dispute</p> <p>For the purpose of Sub-Clause 17.5, a Dispute shall be deemed to arise when one party serves on the other party a notice in writing (hereinafter called a "Notice of Dispute") stating the nature of the Dispute provided that no such notice shall be served later than 28 days after the date of issue of Performance Certificate by the Engineer.</p>
17.5	<p>Two Stages for Dispute Resolution</p> <p>Disputes shall be settled through two stages:</p> <p>(a) Conciliation procedures as established by "The Arbitration and Conciliation Act-1996" (as amended from time to time) and in accordance with this Clause. In the event this procedure fails to resolve the Dispute then;</p> <p>(b) Arbitration procedures undertaken as provided by "The Arbitration and Conciliation Act - 1996" (as amended from time to time) and in accordance with this Clause</p>
17.6	<p>Conciliation</p> <p>Within 60 days of receipt of Notice of Dispute, either party shall refer the matter in dispute to</p>

Contractor

Procuring Entity / Employer

conciliation.

Conciliation proceedings shall be initiated within 30 days of one party inviting the other in writing to Conciliation. Conciliation shall commence when the other party accepts in writing this invitation. If the invitation is not accepted then Conciliation shall not take place. If the party initiating conciliation does not receive a reply within 30 days from the date on which he sends the invitation he may elect to treat this as a rejection of the invitation to conciliate and inform the other party accordingly.

The Conciliation shall be undertaken by one Conciliator selected from a panel of Conciliators maintained by the Employer. The Conciliator shall assist the parties to reach an amicable settlement in an independent and impartial manner

17.7 Conciliation Procedure

The Employer shall maintain a panel of Conciliators, who shall be from serving or retired engineers of Government Departments, or of Public Sector Undertakings. Out of this panel, a list of three Conciliators shall be sent to the Contractor who shall choose one of them to act as Conciliator and conduct conciliation proceedings in accordance with "The Arbitration and Conciliation Act, 1996", of India.

There will be no objection if conciliator so nominated is a serving employee of CSML who would be Deputy level officer and above.

The Employer and the Contractor shall in good faith co-operate with the Conciliator and, in particular, shall endeavour to comply with requests by the Conciliator to submit written materials, provide evidence and attend meetings. Each party may, on his own initiative or at the invitation of the Conciliator, submit to the Conciliator suggestions for the settlement of the dispute.

When it appears to the Conciliator that there exist elements of a settlement which may be acceptable to the parties, he shall formulate the terms of a possible settlement and submit them to the parties for their observations. After receiving the observations of the parties, the Conciliator may reformulate the terms of a possible settlement in the light of such observations.

If the parties reach agreement on a settlement of the dispute, they may draw up and sign a written settlement agreement. If requested by the parties, the Conciliator may draw up, or assist the parties in drawing up, the settlement agreement.

When the parties sign the settlement agreement, it shall be final and binding on the parties and persons claiming under them respectively. The Conciliator shall authenticate the settlement agreement and furnish a copy thereof to each of the parties.

As far as possible, the conciliation proceedings should be completed within 60 days of the receipt of notice by the Conciliator.

The parties shall not initiate, during the conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

17.8	<p>Termination of Conciliation Proceedings</p> <p>The conciliation proceedings shall be terminated:</p> <ul style="list-style-type: none"><li>(a) by the signing of the settlement agreement by the parties on the date of agreement; or</li><li>(b) by written declaration of the conciliator, after consultation with the parties, to the effect further efforts at conciliation are no longer justified, on the date of declaration; or</li><li>(c) by a written declaration of the parties to the conciliator to the effect that the conciliation proceedings are terminated, on the date of declaration; or</li><li>(d) by a written declaration of a party to the other party and the conciliator, if appointed, to the effect that the conciliation proceedings are terminated, on the date of declaration.</li></ul> <p>Upon termination of the conciliation proceedings, the conciliator shall fix the costs of the conciliation and give written notice thereof to the parties. The costs shall be borne equally by the parties unless settlement agreement provides for a different apportionment. All other expenses incurred by a party shall be borne by that party.</p>
17.9	<p>Arbitration</p> <p>If the efforts to resolve all or any of the disputes through conciliation fails, then such disputes or differences, whatsoever arising between the parties, arising out of touching or relating to construction/ manufacture, measuring operation or effect of the Contract or the breach thereof shall be referred to Arbitration in accordance with the following provisions:</p> <ul style="list-style-type: none"><li>(a) Matters to be arbitrated upon shall be referred to a sole Arbitrator if the total value of the claim is upto Rs.5 million and to a panel of three Arbitrators if total value of claims is more than Rs.5 million. The Employer shall provide a panel of three arbitrators which may also include CSML officers for the claims upto Rs.5 million and a panel of five Arbitrators which may also include CSML officers for claims of more than Rs.5 million. The Contractor shall have to choose the sole Arbitrator from the panel of three and/or one Arbitrator from the panel of five in case three Arbitrators are to be appointed. The Employer shall also choose one Arbitrator from this panel of five and the two so chosen will choose the third arbitrator from the panel only. . The Arbitrator(s) shall be appointed within a period of 30 days from the date of receipt of written notice/ demand of appointment of Arbitrator from either party. Neither party shall be limited in the proceedings before such arbitrator(s) to the evidence nor arguments put before the Engineer for the purpose of obtaining his decision. No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator(s) on any matter, whatsoever, relevant to dispute or difference referred to arbitrator/s. The arbitration proceedings shall be held in only. The language of proceedings that of documents and communication shall be English.</li><li>(b) The Employer at the time of offering the panel of Arbitrator(s) to be appointed as Arbitrator shall also supply the information with regard to the qualifications of the said Arbitrator nominated in the panel along with their professional experience, phone nos. and addresses to the contractor.</li><li>(c) The award of the sole Arbitrator or the award by majority of three Arbitrators as the case may be shall be binding on all parties.</li></ul>
17.10	<p>Interest on Arbitration Award</p> <p>Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period, till the date on which the award is made.</p>
17.11	<p>Cost of Arbitration</p> <p>The cost of arbitration shall be borne by the respective parties. The cost shall, inter alia, include the fees of the Arbitrator(s) as per rates fixed by the Employer from time to time.</p>

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## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

17.12	Jurisdiction of Courts Where recourse to a Court is to be made in respect of any matter, the court at Kochi shall have the exclusive jurisdiction to try all disputes between the parties.
17.13	Suspension of Work on Account of Arbitration The reference to Conciliation/Arbitration shall proceed notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, Engineer and the Contractor shall not be altered by reasons of arbitration being conducted during the progress of the Works. Neither party shall be entitled to suspend the work or part of the work to which the dispute relates on account of arbitration and payments to the Contractor shall continue to be made in terms of the Contract.
<b>18. SERVICE OF NOTICES</b>	
18.1	Notice to Contractor a) All notices to the Contractor, shall be served by post or telex or telefax or by hand to the Contractor or his authorized representatives. In case of notices delivered by post, they will be deemed to have been delivered after 7 days of dispatch. b) The Contractor shall, on award of the Contract, furnish to the Engineer, the name, designation, address and telephone, telex and telefax numbers and e-mail address of his representative referred to in Clause 4.3.
18.2	Notice to Employer and Engineer All notices to the Employer or Engineer shall be served by post or telex or telefax, or by delivering by hand to the address nominated for the purpose.
18.3	Change of Address Parties to the Contract may change the nominated address by Employer with a notice to all concerned.

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**Appendix-Dispute Resolution**

**A General Conditions of Dispute Board Agreement**

<b>Appendix-Dispute Resolution A General Conditions of Dispute Board Agreement</b>	
<b>1. Definitions</b>	<p>Each "Dispute Board Agreement" is a tripartite agreement by and between:</p> <ul style="list-style-type: none"> <li>(a) the "Employer";</li> <li>(b) the "Contractor"; and</li> <li>(c) the "Member" who is defined in the Dispute Board Agreement as being:                             <ul style="list-style-type: none"> <li>(i) the sole member of the "DB" and, where this is the case, all references to the "Other Members" do not apply, or</li> <li>(ii) one of the three persons who are jointly called the "DB" (or "Dispute Board") and, where this is the case, the other two persons are called the "Other Members."</li> </ul> </li> </ul> <p>The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.</p>
<b>2. General Provisions</b>	<p>Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:</p> <ul style="list-style-type: none"> <li>a) the Commencement Date defined in the Contract,</li> <li>b) when the Employer, the Contractor and the Member have each signed the Dispute Board Agreement, or</li> <li>c) when the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.</li> </ul> <p>This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Agreement shall terminate upon the expiry of this period.</p>
<b>3. Warranties</b>	<p>The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.</p> <p>When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:</p> <ul style="list-style-type: none"> <li>a) experienced in the work which the Contractor is to carry out under the Contract,</li> </ul>

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

	<ul style="list-style-type: none"> <li>b) experienced in the interpretation of contract documentation, and</li> <li>c) fluent in the language for communications defined in the Contract.</li> </ul>
<p><b>4. General Obligations of the Member</b></p>	<p>The Member shall:</p> <ul style="list-style-type: none"> <li>(a) have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;</li> <li>(b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;</li> <li>(c) have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part</li> <li>(d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);</li> <li>(e) comply with the annexed procedural rules and with Sub-Clause 20.4 of the Conditions of Contract;</li> <li>(f) not give advice to the Employer, the Contractor, the Employer’s Personnel or the Contractor’s Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;</li> <li>(g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;</li> <li>(h) ensure his/her availability for all site visits and hearings as are necessary;</li> <li>(i) become conversant with the Contract and with the progress of the Works (and of any other parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file;</li> <li>(j) treat the details of the Contract and all the DB’s activities and hearings as private and confidential, and not publish or</li> </ul>

**Contractor**

**Procuring Entity / Employer**

**Section VI. General Conditions (GC)**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



**COCHIN SMART MISSION LIMITED**

	<p>disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and</p> <p>(k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).</p>
<p><b>5. General Obligations of the Employer and the Contractor</b></p>	<p>The Employer, the Contractor, the Employer’s Personnel and the Contractor’s Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB’s activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer’s Personnel and the Contractor’s Personnel respectively.</p> <p>The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):</p> <p>a) be appointed as an arbitrator in any arbitration under the Contract;</p> <p>b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or</p> <p>c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member’s functions, unless the act or omission is shown to have been in bad faith.</p> <p>The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.</p> <p>Whenever the Employer or the Contractor refers a dispute to the DB under Sub-Clause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.</p>
<p><b>6. Payment</b></p>	<p>The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:</p> <p>(a) a retainer fee per calendar month, which shall be considered as payment in full for:</p> <p>i) being available on 7 days’ notice for all site visits and hearings;</p> <p>ii) becoming and remaining conversant with all project developments and maintaining relevant files;</p>

**Contractor**

**Procuring Entity / Employer**

Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	<ul style="list-style-type: none"><li>iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and</li><li>iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.</li></ul> <p>The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.</p> <p>With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.</p> <p>(b) a daily fee which shall be considered as payment in full for:</p> <ul style="list-style-type: none"><li>i) each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members (if any);</li><li>ii) each working day on Site visits, hearings or preparing decisions; and</li><li>iii) each day spent reading submissions in preparation for a hearing.</li></ul> <p>(c) all reasonable expenses including necessary travel expenses (air fare in less than first class, hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;</p> <p>(d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.</p> <p>The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 18 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.</p> <p>If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.</p> <p>The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be</p>
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Contractor

Procuring Entity / Employer

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

	<p>accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.</p> <p>The Contractor shall pay each of the Member’s invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract</p> <p>If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer’s rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-Clause 14.8 of the Conditions of Contract.</p> <p>If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may</p> <ul style="list-style-type: none"> <li>i) suspend his/her services (without notice) until the payment is received, and/or</li> <li>ii) resign his/her appointment by giving notice under Clause 7.</li> </ul>
<p><b>7. Termination</b></p>	<p>At any time:</p> <ul style="list-style-type: none"> <li>i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days’ notice to the Member; or</li> <li>ii) the Member may resign as provided for in Clause 2.</li> </ul> <p>If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.</p> <p>If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.</p> <p>Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.</p>
<p><b>8. Default of the Member</b></p>	<p>If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members</p>

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

	<p>(if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.</p> <p>If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non-compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.</p>
<b>9. Disputes</b>	<p>Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.</p>

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### PROCEDURAL RULES

Unless otherwise agreed by the Employer and the Contractor, the DB shall visit the site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DB, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.

The timing of and agenda for each site visit shall be as agreed jointly by the DB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DB. The purpose of site visits is to enable the DB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to endeavor to prevent potential problems or claims from becoming disputes.

Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be coordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the DB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.

The Employer and the Contractor shall furnish to the DB one copy of all documents which the DB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DB and the Employer or the Contractor shall be copied to the other Party. If the DB comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.

If any dispute is referred to the DB in accordance with Sub-Clause 20.4 of the Conditions of Contract, the DB shall proceed in accordance with Sub-Clause 20.4 and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the DB shall:

- (a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case, and
- (b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.

The DB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.

Except as otherwise agreed in writing by the Employer and the Contractor, the DB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party who the DB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.

The Employer and the Contractor empower the DB, among other things, to:

- (a) establish the procedure to be applied in deciding a dispute,
- (b) decide upon the DB's own jurisdiction, and as to the scope of any dispute referred to it,
- (c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Rules,
- (d) take the initiative in ascertaining the facts and matters required for a decision,
- (e) make use of its own specialist knowledge, if any,
- (f) decide upon the payment of financing charges in accordance with the Contract,

**Contractor**

**Procuring Entity / Employer**



## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (g) decide upon any provisional relief such as interim or conservatory measures, and
- (h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.

The DB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the DB shall make and give its decision in accordance with Sub-Clause 20.4, or as otherwise agreed by the Employer and the Contractor in writing. If the DB comprises three persons:

- (a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;
- (b) it shall endeavor to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
- (c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless:
  - (i) either the Employer or the Contractor does not agree that they do so, or
  - (ii) the absent Member is the chairman and he/she instructs the other Members not to make a decision.

**Contractor**

**Procuring Entity / Employer**



## DISPUTES RESOLUTION BOARD'S RULES AND PROCEDURES

### Dispute Resolution during Execution of the Contract

1. Except for providing the services required hereunder, the Board Members shall not give any advice to either party concerning conduct of the Works. The Board Members:
  - (a) shall have no financial interest in any party to the Contract, or a financial interest in the Contract, except for payment for services on the Board;
  - (b) shall have had no previous employment by, or financial ties to, any party to the Contract, except for fee-based consulting services on other projects, all of which must be disclosed in writing to both parties prior to appointment to the Board;
  - (c) shall have disclosed in writing to both parties prior to appointment to the Board any and all recent or close professional or personal relationships with any director, officer, or employee of any party to the Contract, and any and all prior involvement in the project to which the Contract relates;
  - (d) shall not, while a Board Member, be employed whether as a consultant or otherwise by either party to the Contract, except as a Board Member, without the prior consent of the parties and the other Board Members;
  - (e) shall not, while a Board Member, engage in discussion or make any agreement with any party to the Contract, regarding employment whether as a consultant or otherwise either after the Contract is completed or after service as a Board Member is completed;
  - (f) shall be and remain impartial and independent of the parties and shall disclose in writing to the Employer, the Contractor, and one another 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 Board Members; and
  - (g) shall be fluent in the language of the Contract.
2. Except for its participation in the Board's activities as provided in the Contract and in this Agreement none of the Employer, the Contractor, shall solicit advice or consultation from the Board or the Board Members on matters dealing with the conduct of the Works.
3. The Contractor shall
  - (a) Furnish to each Board Member one copy of all documents that the Board 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 Board, including conference facilities, and secretarial and copying services.
4. The Board shall begin its activities following the signing of a Board Member's Declaration of Acceptance by all three Board Members, and it shall terminate these activities as set forth below:

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (a) The Board shall terminate its regular activities when either (i) the Defects Liability Period referred to in Sub-Clause 41.2 (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 pursuant to Sub-Clause 59.1, and when, in either case, the Board has communicated to the parties its Recommendations on all disputes previously referred to it.
- (b) Once the Board has terminated its regular activities as provided by the previous paragraph, the Board shall remain available to process any dispute referred to it by either party. In case of such a referral, Board Members shall receive payments as provided in paragraphs 7 (a) (ii), (iii), and (iv).
5. Board Members shall not assign or subcontract any of their work under these Rules and Procedures. However, the Board may in its 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 Board Members are independent Contractors and not employees or agents of either the Employer or the Contractor.
7. Payments to the Board Members for their services shall be governed by the following provisions:
- (a) Each Board Member will receive payments as follows:
- (i) A retainer fee per calendar month equivalent to two times the daily fee established from time to time for arbitrators under the Administrative and Financial Regulations of the International Centre for Settlement of Investment Disputes (the ICSID Arbitrator's Daily Fee), or such other retainer as the Employer and Contractor may agree in writing. This retainer shall be considered as payment in full for:
- (A) Being available, on seven days' notice, for all hearings, Site visits, and other meetings of the Board.
  - (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 Board Member.
  - (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 Board Member's home and the Site or other location of a Board meeting.

Contractor

Procuring Entity / Employer

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

(B) Each day on Site or other locations of a Board meeting.

(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 Board Member shall be reimbursed against invoices. Receipts for all expenses in excess of [AMOUNT AND CURRENCY] shall be provided.

(iv) Reimbursement of any taxes that may be levied in the country of the Site on payments made to the Board Member (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 each Board Member's term.

(c) Payments to the Board Members shall be shared equally by the Employer and the Contractor. The Contractor shall pay Members' 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 of Contract) for one-half of the amounts of such invoices. The Employer shall pay such Contractor's invoices within the time period specified in the Construction Contract for other payments to the Contractor by the Employer.

(d) 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, entitling the non-defaulting party to take the measures set forth in the Contract.

(e) 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 operation of the Board. 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 maintain operation of the Board, plus all costs of obtaining such sums.

### 8. Board Site Visits

(a) The Board shall visit the Site and meet with representatives of the Employer and the Contractor at regular intervals, at times of critical construction events, at the written request of either party, and in any case not less than two times in any period of 12 months. The timing of Site visits shall be as agreed among the Employer, the Contractor, and the Board, but failing agreement shall be fixed by the Board.

(b) Site visits shall include an informal discussion of the status of the Works and Services, an inspection of the Works and Services, and the review of any Requests for Recommendation made in accordance with paragraph 10 below. Site visits shall be attended by personnel from the Employer and the Contractor.

(c) At the conclusion of each Site visit, the Board shall prepare a report covering its activities during the visit and shall send copies to the parties.

### 9. Procedure for Dispute Referral to the Board:

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (a) If either party objects to any action or inaction of the other party, the objecting party may file a written Notice of Dispute to the other party stating that it is given pursuant to Clause 6 and stating clearly and in detail the basis of the dispute.
- (b) The party receiving the Notice of Dispute will consider it and respond in writing within 14 days after receipt.
- (c) This response shall be final and conclusive on the subject, unless a written appeal to the response is filed with the responding party within 7 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 Board, 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 Board by written Request for Recommendation to the Board. The Request shall be addressed to the Chairman of the Board, with copies to the other Board Members, the other party and it shall state that it is made pursuant to Clause 6.
- (e) The Request for Recommendation shall state clearly and in full detail the specific issues of the dispute to be considered by the Board.
- (f) When a dispute is referred to the Board, and the Board is satisfied that the dispute requires the Board's assistance, the Board shall decide when to conduct a hearing on the dispute. The Board may request that written documentation and arguments from both parties be submitted to each Board Member before the hearing begins. The parties shall submit insofar as possible agreed statements of the relevant facts.
- (g) During the hearing, the Contractor and the Employer shall each have ample opportunity to be heard and to offer evidence. The Board's Recommendations for resolution of the dispute will be given in writing to the Employer and the Contractor as soon as possible, and in any event not more than 56 days after receipt by the Chairman of the Board 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 Board. Private sessions of the Board may be held at any cost-effective location convenient to the Board.
- (b) The Employer and the Contractor shall be given the opportunity to have representatives at all hearings.
- (c) During the hearings, no Board Member shall express any opinion concerning the merit of the respective arguments of the parties.
- (d) After the hearings are concluded, the Board shall meet privately to formulate its Recommendations. All Board deliberation shall be conducted in private, with all Members' individual views kept strictly confidential. The Board's Recommendations, together with an explanation of its reasoning, shall be submitted in writing to both parties. The Recommendations shall be based on the pertinent Contract provisions, applicable laws and regulations, and the facts and circumstances involved in the dispute.

**Contractor**

**Procuring Entity / Employer**

## Section VI. General Conditions (GC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

- (e) The Board shall make every effort to reach a unanimous Recommendation. If this proves impossible, the majority shall decide, and the dissenting Member may prepare a written minority report for submission to both parties.
11. In all procedural matters, including the furnishing of written documents and arguments relating to disputes, Site visits, and conduct of hearings, the Board shall have full and final authority. If a unanimous decision on any such matter proves impossible, the majority shall decide.
12. After having been selected and, where necessary, approved, each Board Member shall sign two copies of the following declaration and make one copy available each to the Employer and to the Contractor:

**Contractor**

**Procuring Entity / Employer**

**Section VI. General Conditions (GC)**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

**BOARD MEMBER'S DECLARATION OF ACCEPTANCE**

WHEREAS

- (a) ..... (the Contract) for the [Insert Name of City]..... has been signed on [fill in date] between [name of Employer] (the Employer) and [name of Contractor] (the Contractor);
- (b) Clause 21.3 of the General Conditions of Contract provides for the establishment and operation of a Disputes Resolution Board (the Board);
- (c) the undersigned has been selected (and where required, approved) to serve as a Board Member on said Board;

NOW THEREFORE, the undersigned Board Member hereby declares as follows:

- 1. I accept the selection as a Board Member and agree to serve on the Board and to be bound by the provisions of Clause 21.3 of the General Conditions of Contract and the Disputes Resolution Board's Rules and Procedures attached to the Conditions of Contract.
- 2. With respect to paragraph 1 of said Disputes Resolution Board'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).

BOARD MEMBER

*[print name of Board Member]*

Date

**Contractor**

**Procuring Entity / Employer**



## **Section VII. Special Conditions (SC)**

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

### Section VII. Special Conditions (SC)

The following Special Conditions shall supplement the GC. Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

#### Part A - Contract Data

Conditions	Sub-Clause	Data
<b>Employer's name and address</b>	1.1.2.8	<b>Managing Director,</b> Cochin Smart Mission Limited (CSML), 10 <sup>th</sup> Floor, Revenue Tower, Park Avenue, <b>Kochi -682011</b> <b>India</b> Telephone Number: <b>+91-0484-2350355</b> Facsimile number: <b>+91-0484-2380980</b> Electronic mail address: <a href="mailto:csmltenders@gmail.com">csmltenders@gmail.com</a>
<b>Engineer's name and address</b>	1.1.2.9, 1.1.2.10 & 3.1	<b>Engineer shall be designated and notified by the Employer</b>
<b>Commencement date</b>	1.1.3.1 8.1	<b>The Commencement date shall be the date specified by the Employer in the Letter of Acceptance. If no date is specified in the Letter of Acceptance the commencement date shall be the date specified in an instruction to the Contractor, in writing to that effect from the Engineer (Notice to Proceed).</b>
<b>Intended Completion Date</b>	1.1.3.11,	<b>For whole works at the end of 15 months</b> (including monsoon period) for Supply, installation, testing, trial run & Commissioning of works and services included under Contract  <b>For section of works, refer to "Table 1 : Summary of Sections" below</b>
<b>Time for Completion</b>	1.1.3.11 8.2	<b>For whole works 15 months</b> (including monsoon period) Supply, installation, testing, trial run & Commissioning of works and services included under Contract  <b>For section of works, refer to "Table 1 : Summary of Sections" below</b>
<b>Sections</b>	1.1.5.5	<b>For section of works, refer to "Table 1 : Summary of Sections" below</b>
<b>Time for the Parties entering into a</b>	1.1.1.5,	28 days of receipt of Notification of Award / Letter of Acceptance (LOA)

Contractor

Procuring Entity / Employer

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<b>Contract Agreement</b>	1.4	The agreement shall be signed with Cochin Smart Mission Limited [CSML]. In case of JV It is mandatory to register the JV under relevant Act after award of Letter of Acceptance but before signing of Contract Agreement within 28 days of issuance of Letter of Acceptance. Failure to register the JV in stipulated period may lead to forfeiting of bid security. The equity sharing as declared at the time of bidding shall be maintained while registering the JV before Contract execution. The minimum equities of all partners shall be maintained throughout the currency of contract. The Agreement shall be signed by both the firm individually and by the representatives of JV.
<b>Department/ Authority/ Implementing Agency name</b>	1.1.6.3; .2.12	Cochin Smart Mission Limited (CSML)
<b>Language</b>	<b>1.3</b>	<b>English</b>
<b>Language for communications</b>	<b>1.3</b>	<b>English</b>
<b>Law</b>	<b>1.3 &amp; 6.4</b>	<b>laws of Government of India and State of Kerala</b>
<b>Care &amp; Supply of Construction and /or manufacture documents</b>	1.6 & 5.6	<b>Add the following at the end of sub clause 5.6:</b>  The Contractor shall maintain standard Site Order Books at the Site at all times during the execution of the Works for the use of the Employer and the Engineer. All site instructions issued by the Employer/Engineer to the Contractor shall be recorded in duplicate in the Site Order Book and shall be signed by the issuer and countersigned by the Contractor. After compliance with the instruction the Contractor shall record the same in the Site Order Book duly signed and countersigned by the Employer/Engineer. Acceptance of any part of the Works executed by the Contractor shall be subject to verification with respect to compliance of respective instructions of the Employer/Engineer through the Site Order Book. The Employer/Engineer shall retain the original copy of the site orders, while the Contractor shall retain the duplicate ones
<b>Communications</b>	1.7, 18.1, 18.2,	Electronic transmission systems  E-mail, fax etc.

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
	18.3	<p>Electronic mail address: <a href="mailto:csmtenders@gmail.com">csmtenders@gmail.com</a></p> <p>Hard copy shall be delivered by hand or mail or courier to following address</p> <p><b>Cochin Smart Mission Limited (CSML), 10th Floor, Revenue Tower, Park Avenue, Kochi -682011</b></p>
<b>Compliance with Laws- Co-ordination with other Government departments</b>	1.10 & 4.4	<p>Add at the end of sub clause 4.4:</p> <p>Co-ordination with other Government departments shall be in Scope of the Contractor.</p>
<b>Engineer's Duties and Authority</b>	3.2	<p>The Engineer shall obtain the specific approval of the Employer before taking action under the following sub clauses of these conditions:</p> <ol style="list-style-type: none"> <li>1) Agreeing or determining an extension of time and/or additional cost in accordance with <b>sub clause 8.4.</b></li> <li>2) Approving a proposal for variation submitted by the Contractor in accordance with <b>sub clause 12.2</b></li> <li>3) Variations resulting in an increase of the Accepted Contract Amount/ quantity in accordance with <b>sub clause 12.5.</b> However the delegation of power of the Employer prevails.</li> </ol>
<b>Performance Security Amount</b>	4.2	<p>The performance security will be in the form of <b>"a Unconditional Bank Guarantee"</b> issued by a bank located in the country of the Purchaser (Scheduled Bank in India with Jurisdiction in Kochi)</p> <p><b>Bank Guarantee submitted against the performance guarantee, shall be unconditional and encashable / invokable at Kochi when presented in specified Branch Office.</b></p> <p>The amount(s) of performance security shall be <b>10 percent</b> of the Accepted Contract Amount and in the <b>currency of the country i.e. INR (Indian Rupees).</b></p> <p>The performance security of a JVA shall be in the name of the JVA that submits the bid.</p> <p>The Contractor shall ensure that the Performance Security including additional performance security amount is valid and</p>

Contractor

Procuring Entity / Employer

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
		<p>enforceable until the Contractor has executed and completed the Works and remedied any defects.</p> <p>Performance Security including additional performance security will be refunded after expiry of defect liability period (original 3 years and extended if any) plus three months provided the final bill has been paid and completion of all obligations under the Contract</p> <p>However, duly considering the performance of the Contractor, the Employer will return the additional Performance Security to the Contractor after receipt of a copy of the work completion (excluding defects liability) certificate from the Engineer with due recommendation for release of additional Performance Security.</p>
<b>Facilities and coordination with others</b>	4.4	<p>Add the following at the end of the Clause:</p> <p>In case any operation connected with the works necessitates diversion, obstruction or closure of any road, railway, waterway or any other right of way, the approval of the Engineer-in-charge or the Engineer's Representative or the respective the Employer, shall be obtained well in advance by the Contractor. In case the Contractor's operations obstruct access to adjacent properties, the Contractor shall be responsible to provide reasonable temporary access to the affected parties. In case the Contractor fails to provide adequate temporary facilities, this shall be deemed to be an uncorrected Defect under the terms of Clause 10 and the Employer shall have the right to engage a third party to correct the Defect and the cost of such correction will be deducted from the Contract Price.</p>
<b>Right of way and facilities</b>	4.12	<p>As per "<b>Table2: Summary of Site Possession Dates</b>" detailed below.</p>
<b>Program</b>	4.13	<p>The Contractor shall submit for approval a Program for the Works within 28 days from the date of the Letter of Acceptance.</p> <p>The period between Program updates is 90 days.</p> <p>The amount to be withheld for late submission of an updated Program is <b>INR 1, 00,000.</b></p> <p>The Contractor shall require to work in a sequential but integrated manner to ensure highest standard of infrastructure delivery in this area. It shall also be responsible for all activities during the</p>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
		<p>complete contract period of 1.25 year. At no point during the Contract Period, the Contractor would be absolve of its responsibilities as defined in the Contract document</p> <p>The Contractor shall submit his proposed construction program in sufficient detail so as to demonstrate: the order in which he proposes to carry out the Works (including each stage of survey, drawings, procurement, manufacture, pre-delivery inspection and testing, delivery to Site, construction, erection, testing and commissioning); all major events and activities in the production of Construction Documents; the periods for the drawings reviews and approvals and for any other submissions, approvals and consents specified in the Employer's Technical Requirements; the sequence of all tests specified in the Contract; etc.</p> <p>The Contractor shall also submit the micro planning program showing detail of area-wise and street wise execution of all activities in time bound manner. The execution program shall not be considered unless street wise plan has been prepared. Any street should not be left dug up for a period more than period proposed and approved by Authority. Any breach of this condition shall constitute a major violation of contract as convenience of citizens is the major reason for bundling all the components together.</p>
		<p>The Contractor should pay particular attention to demonstrating how his proposed program for supply of major items of plant and equipment to be incorporated into the Permanent Works is to be managed to satisfy the requirements of the Contract, including the time required for survey, preparation of working drawings, placing of confirmed orders, manufacturing, pre-delivery inspections and tests, delivery to the Site, storage, installation, etc.</p> <p>Such execution program shall be developed on a commercially available project management software (such as Primavera, MS Project or equivalent) showing level-3 activities, together with bar charts and CPM diagrams which clearly illustrate the critical path, and the resources required to be provided by the Bidder to achieve the desired results.</p> <p>The Contractor's attention is drawn to the requirements set out in this contract, and the Contractor is required to clearly demonstrate how he proposes to meet the Milestone Targets that have been established to ensure that pro-rata progress is maintained on all sub-components of the Works throughout the execution period.</p>
<b>Contractor's Equipment</b>	4.15.1	<p><b>Add the following at the end of this sub clause:</b></p> <p><b>The Contractor shall deploy at least the minimum numbers of the "key equipment" named in the "Schedule-Key Equipment" as referred to in the Section I qualification criteria and other equipment necessary as directed by the</b></p>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
		<b>Engineer based on the work requirement.</b>
<b>Safety of Works</b>	4.16	<p><b>Add at the end of sub clause 4.16:</b></p> <p><b>The Contractor has to:</b></p> <p><b>(a) Prepare a detailed Safety Plan, to be implemented under supervision of Safety Officer of the Contractor, within 28 (twenty eight) days of receiving of Letter of Acceptance to be approved by the Engineer-in-Charge.</b></p>
<b>Electricity Water and Gas</b>	4.18	<b>Charges for power connection, water and gas, if required, during execution and for trial run and commissioning of the facility if any, shall be borne by contractor</b>
<b>Tools, Plants and Equipment Supplied by the Employer</b>	4.19	<b>Not Applicable</b>
<b>Working hours for project execution</b>	6.5	<p><b>8 Hours</b></p> <p>No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the <b>Contract Data / Special Conditions of Contract (SCC)</b>., unless</p> <ul style="list-style-type: none"> <li>(i) otherwise stated in the Contract;</li> <li>(ii) the Engineer gives consent; or</li> <li>(iii) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer in Charge.</li> </ul> <p>If and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the EIC's consent thereto, the EIC shall not unreasonably withhold such consent.</p> <p>This Sub clause shall not apply to any work which is customarily carried out by rotary or double shifts.</p>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<b>Provision of Efficient and Competent Staff</b>	6.9	<b>The Contractor shall deploy at least the minimum numbers of the "key personnel" named in the "scope of work 2.10.1.10" as referred to in the Section III qualification criteria or other personnel approved by the Engineer-in-Charge.</b>
<b>Quality Control &amp; Inspection</b>	7.4	<p><b>Add at the end of sub clause 7.4</b></p> <p><b>Quality Control would be monitored and checked by KMRL (Kochi Metro Rail Limited (Handholding agency for CSML) / CSML</b></p> <p><b>In addition to the specifications detailed in Section IV, KMRL rules of execution shall be followed by the Contractor.</b></p> <p><b>Quality Checking Matrix is as follows</b></p> <p><b>Contractor</b></p> <p>↓</p> <p><b>PMC (Project management consultants)</b></p> <p>↓</p> <p><b>KMRL (hand holding agency) &amp; CSML(authority)</b></p>
		<p>The Contractor shall provide his proposed Quality Assurance and Quality Control (QAQC) Plan which describes the type, frequency and procedure of tests to be done on sites; type, frequency and procedure of tests to be done at manufacturers' locations outside the sites; all parameters to be measured in these tests; permissible limits of such parameters; details of laboratories to be established at sites; details of testing equipment &amp; machines and their calibration schedules; details of the Bidder's internal systems for assuring quality control at the manufacturers' outside the sites; details of qualifications and experience of the Quality Control professionals to be deployed for the entire project; and the systems of Quality Audit to be instituted for systematic and professional management as well as adherence with the highest standards of quality of all construction works.</p> <p>The Contractor shall provide separate descriptions of its proposed QA/QC plan during the construction phase. The Bidder shall also provide copies of the company's standard rules and regulations regarding quality assurance and quality control procedures for</p>

Contractor

Procuring Entity / Employer



## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
		works in general and works of a similar nature.
<b>Inspection</b>	7.4	<p>Add the following at the end of the Clause:</p> <p>The Contractor shall submit the detailed drawings, if any, to the Engineer for approval.</p> <p>For Equipment:</p> <p>The Contractor shall inform the Engineer-in-charge about the likely dates of testing and dispatching of the material. The Contractor shall notify the Engineer-in-charge for inspection and testing, at least seven (7) days prior to packing and shipping and shall supply the manufacturer's test results and quality control certificates.</p> <p>The inspection and test categories shall be applied prior to delivery of the equipment, of various categories as indicated in the technical specifications for each type of equipment.</p> <p>Category A: The drawing has to be approved by the Employer/ Employer's Representative before manufacture and testing. The material has to be inspected by the Engineer-in-charge or his authorized representative after approval at the manufacturer's premise before packing and dispatching. The contractor shall provide the necessary equipment and facilities to visit factory by engineer or its representatives for tests and the cost thereof shall be borne by the Contractor.</p> <p>Category B: The drawings of the equipment have to be submitted and to be approved by the Engineer-in-charge prior to manufacture. The material has to be tested by the manufacturer and the manufacturer's test certificates are to be submitted and approved by the Engineer-in-charge before dispatching of the equipment.</p> <p>Notwithstanding the above, the Engineer-in-charge, after examination of the test certificates, reserves the right to instruct the Contractor for retesting, if required, in the presence of the Contractor's representative.</p> <p>Category C: The material may be manufactured as per relevant standards and delivered to the site.</p> <p>For material / equipment under Category 'A' and 'B' the Engineer-in-charge will provide an authorization for packing and shipping after inspection.</p>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
		Material like energy meter, composite lighting poles or any other equipment which needed approval shall be approved by Kerala State Electricity Board (KSEB) prior to procurement. All energy meters shall be tested & calibrated at KSEB approved testing laboratory.
<b>Maximum amount of liquidated damages for delay</b>	8.5	<b>At the rate of 0.05% of the Accepted Contract Amount per day, subject to a maximum of 10% of the Accepted Contract Amount.</b>
<b>Defects Liability Period</b>	<b>10.1</b>	<b>3 years.</b>
<b>Defects Notification Period</b>	<b>10.2</b>	<b>3 years.</b>
<b>Adjustments for Changes in Cost</b>	11.1.3	<b><u>Price adjustment : NOT applicable</u></b>
<b>1. Advance Income Tax and Work Contract Tax</b>		As per the prevailing Tax Rules of the Government of India and Government of Kerala
<b>2. Royalty for Materials Used</b>		As per the prevailing rates established under Kerala Minor Minerals Concession Rules and any provision amended from time to time and in force.
<b>3. As per Construction Worker's Welfare Cess act 1996.(if applicable)</b>		<b>1 % of the bill amount</b> will be deducted towards the building and other construction workers welfare Cess.

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<b>Advances</b>	11.2	<p><b>Mobilization Advance 10</b> Percentage of the Accepted Contract Amount (excluding provisional sum) payable in the currencies and proportions in which the Accepted Contract Amount is payable. Advance payment shall be made in 2 equal installments against BG</p> <p><b>First instalment of 5% advance payment</b> will be made after the Contractor fulfilled following conditions.</p> <ul style="list-style-type: none"> <li>• Mobilized Project Manager, survey and site mobilization</li> <li>• Submitted to the approval of Engineer- <ul style="list-style-type: none"> <li><input type="checkbox"/> proposed execution program,</li> <li><input type="checkbox"/> mobilization/ deployment schedule,</li> <li><input type="checkbox"/> contractors key personnel, machinery, equipments required for executing the works, Procurement schedule for major materials,</li> <li><input type="checkbox"/> Cash flow forecast statement.</li> </ul> </li> </ul> <p>After first instalment payment has been utilized as per approved program (substantiated by relevant documents) contractor can apply for Second instalment.</p> <p><b>Second instalment of balance 5 % advance payment</b> will be made after the Contractor fulfilled following conditions.</p> <ul style="list-style-type: none"> <li>• Deployment of personnel, machinery, equipment as per approved deployment schedule.</li> <li>• Place confirm orders for supply of major materials as per approved Procurement Schedule.</li> </ul>
<b>Repayment amortization rate of advance payment</b>	11.2.3	<p><b>30 %.</b></p> <p>Repayment will begin when amount of work certified by the Engineer attains 20% of the Contract Price.</p> <p>Advance payment shall be completely repaid prior to the time when 85 percent of the Accepted Contract Amount less Provisional Sums has been certified for payment.</p> <p>If the work is delayed beyond the completion date then the interest to be charged from the Contractor on the remaining portion of the advance beyond the original completion date specified in the Contract, shall be the State Bank of India prime lending Rate plus 2% per annum or 10% per annum whichever is higher.</p>

Contractor

Procuring Entity / Employer

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<b>Minimum Amount of Interim Payment Certificates</b>	11.5	<u>INR 2 Crore</u>
<b>Payment terms</b>	11.6	<u>As per "Table 3 : Payment Terms" below</u>
<b>Payment Interim and Final</b>	11.6	<p>This being an Admeasurement contract, the selected contractor will raise monthly invoices, against the work done in the preceding month and will be paid accordingly after deductions, if any, as per the contract condition.</p> <p>Penalty:</p> <p><u>General:</u></p> <p>If the contractor fails to comply with the following, penalty shall be levied as mentioned against each of the components</p> <ul style="list-style-type: none"> <li>(i) Non submission of monthly report shall invite penalty of INR 20,000 for each such occurrence. The monthly report shall cover all relevant details defined in the contract.</li> <li>(ii) In case any Child labour is employed at site in violation with the laws of the state and India, the employer will levy an additional penalty of Rs 25,000 per incidence and if such instance occurs more than once the contract may be terminated, to be decided at the sole discretion of the Employer</li> </ul>
<b>Limit of Retention Money</b>	11.9	5% of the Accepted Contract Amount
<b>Maximum total liability of the Contractor to the Employer</b>	14.6	<b>1.2 times Accepted Contract Amount</b>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<b>Insurance</b>	15	<p>The details of Insurance covers to be obtained by the Contractor and the Employer, including their value, terms and extent of coverage and other terms and conditions shall be as under:</p> <ul style="list-style-type: none"> <li>(A) for the Works, Plant and Materials;</li> <li>(B) for loss or damages to equipment;</li> <li>(C) for loss or damage to property (except the Works, Plant, Materials and Equipment) in connection with Contract;</li> <li>(D) for personal injury or death; <ul style="list-style-type: none"> <li>(i) of the Contractor's employees;</li> <li>(ii) of other people</li> </ul> </li> </ul> <p>The Sum Insured against each of these items will be as per the Laws of the state of Kerala</p> <p>The Contractor shall take out and maintain in effect the following insurances in the sums and deductibles shown below:</p> <ul style="list-style-type: none"> <li>a. The minimum deductible for insurance of the Works and of Plant and Materials is: [Rs 45 lakh]</li> <li>b. The minimum cover for insurance of the Works and of Plant and Materials is: INR 10 Crore</li> <li>c. The minimum deductible for insurance of other property is: [Rs 3 Lakh]</li> <li>d. The minimum cover for insurance of other property is: Rs. 50 lakh</li> </ul>
		<ul style="list-style-type: none"> <li>e. The minimum cover for personal injury or death insurance <ul style="list-style-type: none"> <li>(i) For the Contractor's employees is: Rs 5 Lakh</li> <li>(ii) And for other people is: Rs 10 Lakh</li> </ul> </li> <li>f. Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Government's country by the Contractor or its Personnel or any Sub-Contractors or their Personnel, with a minimum coverage of equal to <b>Rs 10 Lakh</b> with unlimited number of incidents.</li> </ul>
<b>Minimum amount of third party insurance</b>	15.4, 15.5	<b>INR 10.00 Lakhs per occurrence with the number of occurrences unlimited.</b>
<b>Maximum amount of deductibles for insurance of the Employer's risks</b>	15.4 &15.5	<b>INR 10.00 Lakhs with the number of occurrences unlimited.</b>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

Conditions	Sub-Clause	Data
<p><b>Periods for submission of insurance:</b></p> <p><b>a. evidence of insurance.</b></p> <p><b>b. relevant policies</b></p>	15.5	<p><b>14 days</b></p> <p><b>28 days</b></p>
<b>Date by which the Conciliator shall be appointed</b>	17.7	28 days after the Commencement date
<b>The Conciliator shall be comprised of</b>	17.7	Single Member
<b>List of potential Conciliators for selecting sole member</b>	17.7	<b>"Three"</b>
<b>Rules of arbitration</b>	17.9	<p>Arbitration procedures undertaken as provided by "The Arbitration and Conciliation Act -1996" (as amended from time to time).</p> <p><i>The number of arbitrators shall be three (3).</i></p> <p><i>The language of arbitration shall be English.</i></p> <p><i>The place of such arbitration shall be Kochi, India.</i></p>

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Table 1: Summary of Sections**

Section Name/Description (Sub-Clause 1.1.5.6)		Time for Completion (Sub-Clause 1.1.3.3)	As per Annexure - A
<b>Section Name</b>	<i>Financial progress to be competed</i> <b>As per Annexure- A</b>	<i>Period from the date of Contract agreement</i>	
<b>Milestone 1</b>	i.e. <b>Column(a)</b>	5 months (before the end of 5 months after agreement)	<b>i.e., Column individual (a)</b>
<b>Milestone 2</b>	i.e. <b>Column (b)</b>	5 months (before the end of 10 months after agreement)	<b>i.e., Column individual (b)</b>
<b>Milestone 3</b>	i.e. <b>Column (c)</b>	5 months (before the end of 15 months after agreement)	<b>i.e., Column individual (c)</b>

### ANNEXURE-A

#### MILESTONE TARGETS.

Sl. No.	Particulars	Milestones			Total
		Milestone-1 (a)	Milestone-2 (b)	Milestone-3 (c)	
1	Period (in months)	5	5	5	15
2	Financial progress to be achieved Compared to % of Accepted Contract amount	20% (Cumulative)	70% (Cumulative)	100% (Cumulative)	100%

## Section VII. Special Conditions (SC)

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

**Table 2: Summary of Site Possession Dates**

SI No.	Site Possession extent	Site Possession period
1	<b>First 50%</b> of Site possession will be provided	Within 14 days from the date of Agreement of Contract
2	<b>Next 30%</b> of Site possession will be provided	Within 3 months from the date of Agreement of Contract
3	<b>Balance 20%</b> of Site possession will be provided	Within 6 months from the date of Agreement of Contract

**Table 3: Payment Terms.**

(A) The employer will make the payment to the following items on the following terms-(Clause 15.6 GCC)

Item Type	SI. No	Break up of payment	Percentage of payment release
<b>Dismantling work</b>	1	Dismantling at site & depositing the same at stores	95 %
	2	Final Handing over	5 %
<b>Dismantling &amp; Re-Installation</b>	1	Dismantling & installation at site	70%
	2	Testing and commissioning of installed work	25%
	3	Final Handing over	5 %

(B) The payment of other items will be made as per BOQ as and when they are completed.



Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

## Section VIII. Annex to Special Conditions - Contract Forms

**Section VIII. Annex to Special Conditions – Contract Forms**

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



**COCHIN SMART MISSION LIMITED**

**Section VIII. Annex to Special Conditions –Contract Forms**

Form of Agreement, Forms of Performance Security, and Bank Guarantee for Advance Payment)

**Table of Forms**

<b>Format of Notification of Award.....</b>	<b>322</b>
<b>Format of Contract Agreement.....</b>	<b>322</b>
<b>Format of Performance Security.....</b>	<b>324</b>
<b>Format of Advance Payment Security.....</b>	<b>325</b>
<b>Format of Retention Money Security.....</b>	<b>327</b>

**NOTES ON AGREEMENT, PERFORMANCE AND ADVANCE PAYMENT SECURITIES**

Samples of acceptable forms of Agreement, Performance and Advance Payment Securities are annexed. Bidders should not complete the Performance and Advance Payment Security forms while submitting the Bid. Only the successful Bidder will be required to provide Performance and Advance Payment Securities in accordance with one of the forms or in a similar form acceptable to the Employer

Section VIII. Annex to Special Conditions – Contract Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Format of Notification of Award

Letter of Acceptance

[Letterhead paper of the Employer]

Date: ...../....., 2018

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[Name and address of the Contractor]

This is to notify you that your Bid dated ..... [date] for execution of the tender work of "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi" [name of the Contract and identification number, as given in the Contract Data] for the Accepted Contract Amount of the equivalent of ..... [Amount in numbers and words] [name of currency]....., as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our Agency.

You are requested to furnish the Performance Security amounting to .....and additional performance security (towards unbalanced rates) amounting to .....within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section VIII, Annex to the Special Conditions - Contract Forms, of the Bidding Document

Authorized Signature: \_\_\_\_\_  
Name and Title of Signatory: \_\_\_\_\_  
Name of Agency: \_\_\_\_\_

Attachment: Contract Agreement

Format of Contract Agreement

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, between The Managing Director, of Cochin Smart Mission Limited (CSML), 10<sup>th</sup> Floor, Revenue Tower, Park Avenue, Kochi 682011 (hereinafter "the Employer"), of the one part, and \_\_\_\_\_ of \_\_\_\_\_ (hereinafter "the Contractor"), of the other part:

WHEREAS the Employer desires that the Works known as Bid for "Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi" should be executed by the Contractor, and the Employee has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein amounting to \_\_\_\_\_,

The Employer and the Contractor agree as follows:

**Section VIII. Annex to Special Conditions – Contract Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.

- (i) the Letter of Acceptance
- (ii) the Letter of Bid
- (iii) the addenda Nos \_\_\_\_\_(if any)
- (iv) the Special Conditions / Contract data /Particular Conditions
- (v) the General Conditions;
- (vi) the Specification(Works requirements / Employer’s requirements)
- (vii) the completed Schedules,

3. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute and complete the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of **Government of India** on the day, month and year indicated above.

Signed by ..... Signed by .....

(for the Employer)

(for the Contractor)

for and on behalf of the Employer  
in the presence of

for and on behalf the Contractor  
in the presence of

Witness, Name, Signature, Address, Date    Witness, Name, Signature, Address, Date

**Format of Performance Security**

**(Performance Bank Guarantee- Unconditional)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*[Bank's Name, and Address of Issuing Branch or Office]*

**Beneficiary:** Managing Director,  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi 682011.

**Date:** ...../....., 2018

**PERFORMANCE 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 "**Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**" *[name of contract and brief description of Works]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

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]*),<sup>1</sup> such sum being payable in the types and proportions of currencies in which the Contract Price is payable, 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(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

<sup>1</sup> The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency(cies) of the Contract or a freely convertible currency acceptable to the Employer.

Section VIII. Annex to Special Conditions – Contract Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

This guarantee shall expire no later than twenty-eight days from the date of issuance of the Taking-Over Certificate, calculated based on a copy of such Certificate which shall be provided to us, or on the \_\_\_ day of ....., 2... <sup>2</sup>, whichever occurs first. 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, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

\_\_\_\_\_  
[signature(s)]

**Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.**

**Format of Advance Payment Security**

**(Bank Guarantee- Unconditional)**

**Demand Guarantee**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*[Bank’s Name, and Address of Issuing Branch or Office]*

**Beneficiary:** Managing Director,  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi 682011.

<sup>2</sup> *Insert the date twenty-eight days after the expected completion date. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”*

Section VIII. Annex to Special Conditions – Contract Forms

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

Date: ...../....., 2018

ADVANCE PAYMENT 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 "**Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**" (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum \_\_\_\_\_ [amount in figures] ( \_\_\_\_\_ ) [amount in words] is to be made against an advance payment 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]<sup>1</sup> 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 or if in the opinion of Employer, Contractor did not perform well to reach upto the stipulated milestone target of Contract agreement.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number \_\_\_\_\_ at \_\_\_\_\_ [name and address of Bank].

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that eighty (80) percent of the Contract Price has been certified for payment, or on the \_\_\_ day of \_\_\_\_\_, 2\_\_\_\_,<sup>2</sup> whichever is earlier. 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.

\_\_\_\_\_  
[signature(s)]

<sup>1</sup> The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Employer.

<sup>2</sup> Insert the expected expiration date of the Time for Completion. The Employer should note that in the event of an extension of the time for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."



Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

**Format of Retention Money Security**

**(Bank Guarantee- Unconditional)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*[Bank's Name, and Address of Issuing Branch or Office]*

**Beneficiary:** Managing Director,  
Cochin Smart Mission Limited (CSML),  
10<sup>th</sup> Floor, Revenue Tower, Park Avenue,  
Kochi 682011.

**Date:** ...../....., 2018

**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 "**Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**" *[name of contract and brief description of Works]* (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]*<sup>1</sup>) upon receipt by us of your first demand in writing accompanied by a written statement

<sup>1</sup> *The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or 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.*



**Section VIII. Annex to Special Conditions – Contract Forms**

**Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi**



**COCHIN SMART MISSION LIMITED**

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 or if in the opinion of Employer, Contractor did not perform well to reach upto the stipulated milestone target of Contract agreement.

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.

\_\_\_\_\_  
*[seal of the Bank and signature(s)]*

*Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

## Section IX. Drawings

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



Smart City  
MISSION TRANSFORMATION

COCHIN SMART MISSION LIMITED

## Drawings

### Section IX. Drawings

## Section IX. Drawings

*(Uploaded Separately in.pdf file as VOLUME-3)*

Contractor

Procuring Entity / Employer

## Section IX. Drawings

Bidding document for Development of Smart Roads in Ernakulam ABD Area under Smart City Mission, Kochi



COCHIN SMART MISSION LIMITED

The following tender drawings are enclosed / uploaded along with this Bidding document for reference

### DRAWING INDEX

DRAWING INDEX			
SI No.	DRAWING TITLE		DRAWING NO.
1	PLAN&PROFILE ABRAHAM MADAMAKKAL ROAD	CH:0 to 500	CSML/M4/SMR/ABM/PL-001
2	P PLAN&PROFILE ABRAHAM MADAMAKKAL ROAD	CH:500 to 1112	CSML/M4/SMR/ABM/PL-002
3	PLAN&PROFILE BANERJI ROAD	CH:0 to 500	CSML/M4/SMR/BAN/PL-003
4	PLAN&PROFILE BANERJI ROAD	CH:500 to 905	CSML/M4/SMR/BAN/PL-004
5	PLAN&PROFILE SHANMUGHAM ROAD	CH:0 to 500	CSML/M4/SMR/SHM/PL-005
6	PLAN&PROFILE SHANMUGHAM ROAD	CH:500 to 891	CSML/M4/SMR/SHM/PL-006
7	PLAN&PROFILE PARK AVENUE	CH:0 to 600	CSML/M4/SMR/PAA/PL-007
8	PLAN&PROFILE PARK AVENUE	CH:600 to 1179	CSML/M4/SMR/PAA/PL-008
9	PLAN&PROFILE PARK AVENUE LINK ROAD	CH:0 to to 292	CSML/M4/SMR/PAA/PL-009
10	PLAN&PROFILE DURBAR HALL ROAD	CH:0 to 534	CSML/M4/SMR/DHL/PL-0010
11	ERNAKULAM DRAINAGE PLAN-1	Sheet 1 of 4	CSML/M4/DRA/EKM/PL-0011
12	ERNAKULAM DRAINAGE PLAN-2	Sheet 2 of 4	CSML/M4/DRA/EKM/PL-0012
13	ERNAKULAM DRAINAGE PLAN-3	Sheet 3 of 4	CSML/M4/DRA/EKM/PL-0013
14	ERNAKULAM DRAINAGE PLAN-4	Sheet 4 of 4	CSML/M4/DRA/EKM/PL-0014
15	TYPICAL TABLE TOP CROSSINGS DETAILS	Sheet 1 of 1	CSML/M4/SMR/TAT--025
16	TYPICAL CULVERT DRAWINGS	Sheet 1 of 1	CSML/M4/SMR/CLV-026
17	TYPICAL DRAIN DRAWINGS	Sheet 1 of 1	CSML/M4/SMR/DRA-027
18	PROPOSED BRIDGE AT ABRAHAM MADAMAKKAL ROAD CH: 0+370	SHEET 1 of 1	CSML/M4/SMR/BRG-028