

BRIHANMUMBAI MUNICIPAL CORPORATION



Name of work: - W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S.

Sd/-
EE(Roads) Z-VII

Sd/-
Dy.Ch.E.(Roads)WS

Sd/-
Ch.E.(Roads & Tr.)

Sd/-
A.E.(Roads)R/South

Sd/-
A.E.(Roads)R/Central

Sd/-
A.E.(Roads)R/North

Sd/-
S.E.(Roads)R/South

Sd/-
S.E.(Roads)R/Central

Sd/-
S.E.(Roads)R/North

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SECTION - 1

E-TENDER NOTICE

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BRIHANMUMBAI MUNICIPAL CORPORATION

No. Ch E./4143/SR/Roads & Tr. dated 02.08.2022

E-TENDER NOTICE

Subject:	<u>W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S (Bid No 7200034714)</u>
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The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) invites e-tender to appoint Contractor for the aforementioned work from contractors of repute, multidisciplinary engineering organizations i.e. eminent firm, Proprietary/Partnership Firms/ Private Limited Companies/ Public Limited Companies/Companies registered under the Indian companies' act 2013, the contractors registered with the BRIHANMUMBAI MUNICIPAL CORPORATION, (BMC) in **Class I(A)** and above (excluding those who are blacklisted) or those having equivalent or more work experience from Central or State Government/Semi Govt. Organization/Central or State Public Sector Undertakings works, will be allowed subject to condition that, the contractors who are not registered with BMC will have to apply for registering their firm within three months from the date of issue of work order, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be forfeited/recovered and a penalty of 0.1% of contract cost or Rs. 10,000/- whichever is more will be recovered/deducted from contractors payment/bill by existing department in BMC. Bidding Process will comprise of THREE stages.

The application form can be downloaded from BMC's portal (<http://portal.mcgm.gov.in>) on payment of **Rs.10,400 + applicable GST**. The applicants not registered with BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process & obtain login credentials to participate in the online bidding process.

i) To download the application form, for those applicants not having vendor registration, need to apply first for vendor registration at the office of Account Officer (FAR), 3rd floor, Municipal Headquarter.

ii) Followed by SRM login ID and password to be obtained from Central Purchase De-partment (CPD), Office at Byculla, Bakariadda, Mumbai.

iii) For e-Tendering registration, enrollment for digital signature certificates and user manual, please refer to respective links provided in 'Tenders' tab. Vendors can get digital signa-ture from any one of the Certifying Authorities (CA's) licensed by controller of certifying au- thorities namely, Safes crypt, IDRBT, National informatics center, TCS, CUSTOMS, MTNL, GNFC and e- Mudhra CA.

Name of work	Contract period	Estimated Cost
<u>W-415- Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S. (Bid No 7200034714)</u>	24 Months (Excluding Monsoon)	Rs. 1073,93,65,732/-

In terms of the 3-stage system of e-tendering, a Bidder will be required to deposit, along with its Bid, an Earnest Money Deposit of Rs. 10,73,94,000/- (**Rupees Ten Crores Seventy Three Lakhs Ninety Four Thousand Only**) (the "EMD"), refundable in accordance to the relevant clause of bid document, from the Bid Due Date, except in the case of the selected Bidder whose Bid Security/EMD shall be retained. The Bidders will have to provide Earnest Money Deposit through the payment gateways while submitting the bids. The Bid shall be summarily rejected if it is not accompanied by the Earnest Money Deposit. The e-tender is available on BMC portal (<http://portal.mcgm.gov.in>) as mentioned in the Header Data of the tender.

As per THREE Packet systems, the document for Packet A & B is to be uploaded by the bidder in vendors' document online in Packet A, B. Packet A, B & C shall be opened on dates as mentioned in header data. All the responsive and eligible bidders if they so wish can be present at the time of opening of bids, in the office of Dy. Chief Engineer (Rds.) WS. The Packet C shall be opened if bids submission in Packet A & B satisfies/includes all the requirements and same are found acceptable to the Authority.

The Municipal Commissioner reserves the right to reject all or any of the e-tender(s) without assigning any reasons at any stage.

The dates and time for submission and opening the bids are as shown in the Header Data. If there are any changes in the dates the same will be displayed on the BMC Portal. (<http://portal.mcgm.gov.in>)

The Applicants interested for the above referred works may contact the Dy. Chief Engr.(Rds.) WS at the following address on any working day during office hours.

Office of: Dy.Ch. E.(Roads)WS,
2nd and 3rd floor, Sanskruti Godown building
Off 90feet road, Thakur Complex, Kandivali East
Mumbai - 400101.

The applicants may wish to visit the sites and can collect the information of the present status from the department who have invited the bids. The BMC reserves the rights to accept any of the application or reject any or all the application received for above works, without assigning any reasons thereof. The information regarding above subject matter is available on Website of BMC. (<http://portal.mcgm.gov.in/tenders>)

Sd/- 02.08.2022

Dy.Ch.Eng (Rds) WS

HEADER DATA

Tender Document Number	7200034714
Name of Organization	BRIHANMUMBAI MUNICIPAL CORPORATION
Subject	<u>W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S. (Bid No 7200034714)</u>
Cost of Tender	Rs.10,400/- + applicable GST
Cost of E-Tender (Estimated Cost)	Rs. 1073,93,65,732/-
Bid Security Deposit/ EMD	Rs. 10,73,94,000/-
Date of issue and sale of tender	03.08.2022 (Wednesday) from 11:00 Hours onwards.
Last date & time for sale of tender	02.09.2022 (Friday) upto 12:00 Hrs.
Submission of Packet A, B & Packet C(Online) & receipt of Bid security deposit	02.09.2022 (Friday) upto 16:00 Hrs.
Pre-Bid Meeting	Date: 17.08.2022 (Wednesday) at 15:00 Hours. Venue: Office of Additional Municipal Commissioner (Projects), 2 nd Floor, Brihanmumbai Municipal Corporation Head Office, Mahapalika Marg, Fort, Mumbai – 400 001.
Opening of Packet A	05.09.2022 (Monday) after 12:15 Hours onwards
Opening of Packet B	05.09.2022 (Monday) after 12:20 Hours onwards
Opening of Packet C	21.09.2022 (Wednesday) after 11:00 Hours onwards
Address for communication	Office of the Deputy Chief Engineer (Roads) Western Suburbs, 2nd floor, 'A' – Wing, BMC Godown Building, Sanskruti Complex, 90ft road, Kandivali (East), Mumbai- 400 101. ☎ +9122-20891350 / 20890553, Email id: - dychews01.roads@mcgm.gov.in
Venue for opening of bid	Online in the Office of the Deputy Chief Engineer (Roads) Western Suburbs, 2nd floor, 'A' – Wing, BMC Godown Building, Sanskruti Complex, 90ft road, Kandivali (East), Mumbai- 400 101. ☎ +9122-20891350 / 20890553, Email id: - dychews01.roads@mcgm.gov.in

This tender document is not transferable.

BMC reserves the rights to accept any of the application or reject any or all the application received for above subject without assigning any reason thereof.

Sd/-02.08.2022

Dy.Ch.Eng (Rds) WS

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SECTION-2

ELIGIBILITY CRITERIA

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Eligibility of Applicants

The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) invites e-tender to appoint Contractor for the aforementioned work from contractors of repute, multidisciplinary engineering organizations i. e. eminent firm, Proprietary/Partnership Firms/ Private Limited Companies/ Public Limited Companies/Companies registered under the Indian companies' act 2013 ,the contractors registered with the BRIHANMUMBAI MUNICIPAL CORPORATION, (BMC) **in Class I(A) and above** (excluding those who are blacklisted) or those having **equivalent or more work experience** from Central or State Government/Semi Govt. Organization/Central or State Public Sector Undertakings works, will be allowed subject to condition that, the contractors who are not registered with BMC will have to apply for registering their firm within three months from the date of issue of work order, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be forfeited/recovered and a penalty of 0.1% of contract cost or Rs. 10,000/- whichever is more will be recovered/deducted from contractor's payment/bill by existing department in BMC.

Joint venture (JV) will not be allowed for this work and consortium will not be allowed. Similarly, sub-letting will not be allowed strictly. The payments made for manpower/material/machinery shall be payable by the bidding agency, If it is proved otherwise, stringent action will be taken against the bidding agency which shall be noted.

To be eligible for pre-qualification and short-listing, an Applicant shall fulfil the following conditions of eligibility:

2.1 Technical Capacity

The tenderer(s) in their own name should have satisfactorily executed the work of similar nature BMC /Semi Govt. /Govt. & Public Sector Organizations during last seven (7) financial years as a prime Contractor (or as a nominated sub-Contractor, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied).

The financial year in which bids are invited will be considered as current financial year. The value of completed works shall be considered during last seven (7) financial years and up to date of submission of tender.' The financial year 2022-23 will be considered current financial year. Enhancement will be applicable for F.Y 2021-22 completed on 31st March 2022 and previous years therein.

- a) **Three similar completed works or currently executing three works of similar nature each costing 40% of estimated cost.***

OR

b) Two similar completed works or currently executing two works of similar nature each costing 50% of estimated cost.*

OR

c) One completed work or currently executing one work of similar nature of aggregate 80% of estimated cost-

The value of executed works shall be brought to current costing level by enhancing the actual value of work at compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of applications for tenders.

***In case of ongoing works to be considered, the bidder must have received payment bills of 80% of the contract sum for the work/works executed last day of month previous to the one in which bids are invited.**

2.2 Similar Experience:

“The ‘Similar Experience’ for ‘Original and New work’ shall mean:-

“The bidders should have carried out Road carriage way in any State Highway/National Highways/Expressway only, carried out in CC Pavement / CC Passage / TWT / UTWT in M40 and above or Asphalt Road in Asphalt Mix / Mastic Asphalt shall be considered”.

2.3 Financial Capacity

Achieved average annual financial turnover as certified by ‘Chartered Accountant’ (in all classes of civil engineering construction works only) equal to 30% of the estimated cost of work in last Five (5) financial years immediately preceding the Financial Year in which bids are invited.

To ascertain this, tenderer(s) shall furnish /upload the financial statement (Audited balance sheet) duly certified by Chartered Accountant.

The turnover can be enhanced by 10% every year to bring the present level.

Achieved an average annual financial turnover as certified by ‘Chartered Accountant’ (in all classes of civil engineering construction works only) equal to 30% of the estimated cost of work in last Five (5) financial years immediately preceding the Financial Year in which bids are invited.

To ascertain this, tenderer(s) shall furnish /upload the financial statement (Audited balance sheet) duly certified by Chartered Accountant.

The turnover can be enhanced by 10% every year to bring the present level. The financial year 2022-23 will be considered current financial year. Enhancement will be applicable for F.Y 2021-22 completed on 31st March 2022 and previous years therein.

2.4 Bid Capacity:

The bid capacity of the prospective bidders will be calculated as under: Assessed Available Bid Capacity = (A* N* 1.5 - B)

Where,

A = Maximum value of Civil Engineering in any **State Highway/National Highways/Expressway works** executed in any one year (year means financial year) during **the last five years** (updated to the price level of the Financial year in which bids are received at a rate of 10% per year) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the Project/Works, **excluding monsoon period**, for which these bids are being invited. (E.g. 7 months = 7/12 year). For every intervening monsoon 0.33 shall be added to N.

B = Value of existing commitments (only allotted works) on the last date of submission of bids as per bidding document and on-going works to be completed during the period of completion of the Project/Works for which these bids are being invited.

Note: The statement showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be attached along with certificates duly signed by the Engineer-in Charge, not below the rank of an Executive Engineer or equivalent.

Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- Record for poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, or financial failures etc.

2.5 Material Production Equipment Capabilities as required for this work

New and Original Works: The bidder should, undertake their own studies and **furnish with their bid**, a detailed construction planning and methodology supported with assessment study of requirements of equipment/plants & machineries to allow the employer to review their proposal.

A) All bidders shall submit in Packet-B,

The bidder shall upload the details of ownership of 80% of Machinery and Equipment's as listed in the modified Annexure-H The bidder should categorically specify the bid no, work code no and ward/zone in which he has submitted the ownership documents of the bids. For any machinery only RC book / Ownership documents shall be considered as adequate proof of

ownership along with photocopy of PAN card of owner / firm / company. The 80% of one set of machinery submitted for any work will be considered exclusively for said work only (For each work separate exclusive set of machinery shall be required).

The balance 20% machinery mentioned in Annexure-H can be provided in form of Exclusive Assured Access. **If Machinery and Equipment is not available as per this clause, then it shall be treated as non-curable defect and EMD will be forfeited.**

[I] For Cement-Concrete Road Works: -

For C.C Road/C.C Passage/TWT/ UTWT works, it is mandatory that bidders should submit in Packet-B, the Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond, in prescribed format annexed in the Annexure -G, with BMC registered (i) RMC plant owner. The Bidder shall submit assured access to mechanized concreting paver machine and relevant machinery and undertaking on Rs 500 stamp paper for providing the machinery required for mechanized concreting as directed by Engineer-in-charge.

[II] For Asphalt/Mastic Road Works

For Asphalt/ Mastic asphalt road/junction works, it is mandatory that bidder should submit in Packet-B, the Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond, in prescribed format annexed in Annexure-G, with (i) BMC registered **Asphalt plant owner (ii) Asphalt plant owner who have arrangement for Mastic asphalt production** regarding supply of materials as per BMC specification for that work code only

The Bidder shall allow BMC staff access to his plants, machinery for checking of their functioning & materials used for manufacturing and for quality management purposes as and when directed by the Engineer-in-charge.

1. In case of otherwise eligible bidders who have not complied with the submission of Irrevocable Undertaking cum Declaration cum Indemnity bond in Packet-B. (Non-submission of said Undertaking will not be considered as a **Shortfall**) and they **all will be allowed to submit the same within seven days from the opening of Packet-C. However, failure to submit within seven days will be treated as non-curable defect and the bidders EMD will be forfeited.**
2. If L-1 bidder fails to comply with the submission of the said Irrevocable Undertaking cum Declaration cum Indemnity bond with plant owners then in that case submission of the undertaking complied by the next successive eligible bidders within the requisite time i.e. 7 days will be taken into the consideration.

Thereafter, negotiations will be done with the said successive / responsive bidder with respect to his quoted rate.

Note: - For e.g. if L-1, L-2, L-3 fails to submit said Registered Irrevocable Undertaking cum Declaration cum Indemnity bond and if L-4 have submitted the said Undertaking then he will be called for the negotiation with respect to his quoted rates.

2.6 Technical Personnel

The bidders shall note that the **technical staff shall be on the payroll of the bidder for a minimum of six months prior to bidding date and following staff shall be provided during execution of the work for captioned work only.**

Estimated Cost of work (Rs. In Crore)	Requirement of Technical Staff		Minimum Experience (years)	Designation
	Qualification	Nos.		
More than 100 Crore and for every 100 crore or part thereof Additional staff (except Project Manager) as per this requirement table shall be provided	i) Graduate Engineer (Major component)	1	20	Project Manager in Civil/Construction engineering
	ii) Graduate Engineer	2+1	12	Deputy Project Manager in Civil/Construction engineering
	iii) Graduate Engineer or Diploma Engineer	4	5 10	Project/Site Engineer
	iv) Graduate Engineer	1+1	8	Quality Engineer
	iv) Graduate Engineer	1	5	Safety Engineer
	v) Diploma Engineer	2	8	Surveyor
More than 50 to 100	vi) Graduate Engineer	1+1	6	Project Planning/ Billing Engineer
	i) Graduate Engineer	1	20	Project Manager in Civil/Construction engineering
	ii) Graduate Engineer	1+1	12	Deputy Project Manager in Civil/Construction engineering
	iii) Graduate Engineer or Diploma Engineer	2+1	5 Or 10	Project/Site Engineer
	iv) Graduate Engineer	1	8	Quality Engineer

Estimated Cost of work (Rs. In Crore)	Requirement of Technical Staff		Minimum Experience (years)	Designation
	Qualification	Nos.		
	v) Graduate Engineer	1	5	Safety Engineer
	vi) Diploma Engineer	1	8	Surveyor
	vii) Graduate Engineer	1+1	6	Project Planning/ Billing Engineer.
More than 20 to 50	i) Graduate Engineer	1	20	Project Manager
	ii) Graduate Engineer or Diploma Engineer	1+1	5 Or 10	Project/Site Engineer
	iii) Graduate Engineer	1	8	Quality Engineer
	iv) Graduate Engineer	1	5	Safety Engineer
	v) Diploma Engineer	1	8	Surveyor
	v) Graduate Engineer	1	6	Project Planning/ Billing Engineer

Notes- 1 "Cost of work", in table above, shall mean the agreement amount of the work.

2. Rate of recovery in case of non-compliance of the clause be stipulated at following rates

Sr. No	Qualification	Experience(years)	Rate of Recovery per technical person
1	Project Manager with degree	20	Rs.6,00,000/- p.m.
2	Deputy Project Manager with degree	12	Rs.4,00,000/- p.m.
3	Project/Site	5 or 10 respectively	Rs.2,50,000/- p.m.
4	Quality Graduate Engineer	8	Rs.2,50,000/- p.m.
5	Surveyor	8	Rs.1,50,000/- p.m.
6	Project Planning/ Billing Engineer	6	Rs.2,00,000/- p.m.
7	Road Safety Engineer Graduate Engineer or Diploma Engineer-	5 (for Graduate) Or 10(for Diploma	Rs.2,50,000/- p.m.

3. Nothing extra need to be added while preparing market rate justified amount of the work if stipulation is made as per above recommended scale of technical staff.
4. Requirement of technical staff and their experience can be varied depending upon cost and complexity of the work by competent authority i.e. Chief Engineer with recorded reasons.
5. The failure in providing experienced technical and /professional ability personnel and even ignoring the instruction of the Engineer-in-charge shall be linked to penalization. Such disobeying attitude of the contractor shall also be reported to Registration & Monitoring department as per rules governing Registration of Contractors for Civil and Mechanical & Electrical Engineering works-2016.
6. **The successful bidder shall submit the CV of all technical personnel along with photo-id proof, Education qualification and experience certificates.**

(B) General Guidelines for Fixing Requirement of Technical Staff

Cost of work (Rs. In Crore)	Requirement of Technical Staff		Minimum Experience (years)	Designation
	Qualification	Nos.		
10 to 20	i) Project Manager with degree in corresponding discipline of Engineering	1	10	Principal Technical Representative
	ii) Graduate Engineer	1	5	Technical Representative

Cost of work (Rs. In Crore)	Requirement of Technical Staff		Minimum Experience (years)	Designation
	Qualification	Nos.		
	iii) Graduate Engineer or Diploma Engineer	2 2	2 5	Project/Site Engineer and Project Planning/ Billing Engineer
5 to 10	i) Graduate Engineer	1	5	Principal Technical Representative
	ii) Graduate Engineer or Diploma Engineer	2 2	2 5	Project/Site Engineer
More than 1.5 to 5	i) Graduate Engineer	1	5	Principal Technical Representative
	ii) Graduate Engineer or Diploma Engineer	1 1	2 5	Project/Site Engineer

Notes- 1 "Cost of work", in table above, shall mean the agreement amount of the work.

2. Rate of recovery in case of non-compliance of the clause be stipulated at following rates:-

Sr. No.	Qualification	Experience(years)	Rate of Recovery per technical person
1	Project Manager with	10	Rs.3,00,000/- p.m.
2	Graduate Engineer	5	Rs.2,50,000/- p.m.
3	Graduate Engineer	2	Rs. 1,50,000/- p.m.
4	Diploma Engineer	5	Rs. 1,50,000/- p.m.

It shall also be ensured that the bidder appoints requisite staff only from reputed and approved universities along with minimum relevant site/work experience required for carrying out good quality work as per specification. The engineering staff of bidders is to be qualified from recognized universities/technical board such as AICTE approved colleges, universities, AMIE, Deemed Universities. Diploma from MSBTE or any other state technical board. And the bidder should upload only such certificates of engineering staff failing which 10% EMD will be forfeited.

Please note:

This condition does not relieve contractor from the responsibility towards quality, quantity, performance, any untoward incident on site etc. of the work.

“During the DLP period, the following staff shall also be available along with enough labour force and machinery for maintenance activities especially during monsoon:

Cost of work (Rs. In Crore)	Requirement of Technical Staff during Monsoon and DLP period		Minimum Experience (years)	Designation
	Qualification	Nos. (minimum)		
Irrespective of Cost	i) Graduate Engineer or Diploma Engineer	1	5 Or 10	Road Safety Engineer
		1	5 Or 10	Project/Site Engineer
	ii) Graduate Engineer or Diploma Engineer	1	8	Quality Engineer
	iii) Graduate Engineer			
Besides above enough Supervisors and labour shall be provided.				

Notes-

- 1) "Cost of work", in table above, shall mean the agreement amount of the work.
- 2) Rate of recovery in case of non-compliance of this clause be stipulated at following rates.
- 3) During Monsoon period the rate of recovery shall be double of the rate given below. Further, if enough material, labour and machinery is not available an additional penalty of Rs 25000/- per day will be imposed for each lapse/site.

Sr. No	Qualification	Rate of Recovery during DLP(excluding monsoon)	Rate of Recovery during Monsoon
1	Project/Site Engineer (Degree/Diploma)	Rs.2,50,000/- p.m.	Rs.5,00,000/- p.m.
2	Road Safety Engineer (Degree/Diploma)	Rs.2,50,000/- p.m.	Rs.5,00,000/- p.m.
3	Quality Engineer (Graduate)	Rs.2,50,000/- p.m.	Rs.5,00,000/- p.m.

Please note:

[1] This condition do not relieve contractor from the responsibility towards quality, quantity, performance, any untoward incident on site etc. of the work.

[2] **The Bidder to note that the technical staff specified in clause 2.6 shall be compulsorily available during execution of all work or during site visits of BMC staff, eminent persons. If necessary, the contractor is directed to provide technical staff in shifts. If it is found that contractor's staff is found absent any time during the day during work hours, the proportionate penalty mentioned above will be applicable for the day.**

[3] **If Contractor wants to change the technical staff employed by him on site, he shall take prior approval of Zonal DyChE(Roads).**

SECTION 3 DISCLAIMER

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DISCLAIMER

The information contained in this e-tender document or provided to Applicant(s), whether verbally or in documentary or any other form, by or on behalf of the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC), hereafter also referred as “The Authority “, or any of its employees or advisors, is provided to Applicant(s) on the terms and conditions set out in this e-tender and such other terms and conditions subject to which such information is provided.

This e-tender includes statements, which reflect various assumptions and assessments arrived at by the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This e-tender may not be appropriate for all persons, and it is not possible for the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC), its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this e-tender. The assumptions, assessments, statements and information contained in this e-tender may not be complete, accurate, adequate or correct. Each Applicant should therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this e-tender and obtain independent advice from appropriate sources.

Information provided in this e-tender to the Applicant(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed here.

The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC), its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this e-tender or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the e-tender and any assessment, assumption, statement or information contained therein or deemed to form part of

this e-tender or arising in any way with pre-qualification of Applicants for participation in the Bidding Process. The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) also accepts no liability of any nature whether resulting from negligence or otherwise

howsoever caused arising from reliance of any Applicant upon the statements contained in this e-tender.

The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this e-tender.

The issue of this e-tender does not imply that the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) is bound to select and short-list pre-qualified Applications for Bid Stage or to appoint the selected Bidder or Concessionaire, as the case may be, for the Project and the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) reserves the right to reject all or any of the Applications or Bids without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by The BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) or any other costs incurred in connection with or relating to its Application. All such costs and expenses will remain with the Applicant and the BRIHANMUMBAI MUNICIPAL CORPORATION (BMC) shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process.

SECTION - 4

INTRODUCTION

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INTRODUCTION

1.1 Background:

The Brihanmumbai municipal corporation covers an area of 437.71sq.kms.with a population of **1.24 Crores as per census of 2011**. The metropolis accounts major portion of India's international trade and government's revenue, from being one of the foremost centers of education, science and technological research and advancement.

The Mumbai Metropolis has historic tradition of strong civic activism dedicated to the cause of a better life for all its citizens. And it's the Brihanmumbai municipal corporation (BMC), hereafter called the "corporation", the primary agency responsible for urban governance in Greater Mumbai.

BMC (The Authority) is one of the largest local self-governments in the Asian Continent. In observance of historic traditions of strong civic activism, with the change in timeand living conditions to match with the urbanization, BMC has mainly focused in providing almost all kinds of engineering services viz, Hydraulics, storm water drain, sewerage, water supply projects, roads, bridges, solid waste management, and environmental services. Beside this,the BMC is also providing dedicated services in various segments such as Health, Primary Education as well as the construction and maintenance of Public Markets and Slaughterhouses.

BMC is an organization having different departments, right from engineering depts. to health depts. Moreover, we have other dept. like education, market, fire brigade dept., Octroiand other such departments where quite a good number of staff members are working.

Scope of Work:

BMC is primarily an organization, which in the interest of citizens and with the speedof urbanization deals with the variety of the infrastructure services and delivered to the public by different departments like Water Supply Projects, Sewerage Projects, Hydraulics, Storm WaterDrain/Roads and bridges and Building Construction etc.

This work is a predominantly a work pertaining to **W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S.'s**

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SECTION 5

**E-TENDERING ONLINE
SUBMISSION PROCESS**

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E-TENDERING ONLINE SUBMISSION PROCESS

The terminology of e-Tendering is solely depending upon policies in existence, guidelines and methodology adopted since decades. The SRM is only change in process of accepting and evaluation of tenders in addition to manual. The SAP module to be used in this E-tendering is known as Supplier Relationship Module (SRM). SRM is designed and introduced by ABM Knowledge ware Ltd. who will assist BMC in throughout the tendering process for successful implementation.

NOTE: This tendering process is covered under Information Technology ACT & Cyber Laws as applicable.

(1) In e-tendering process some of the terms and its definitions are to be read as under wherever it reflects in online tendering process.

Start Date read as "Sale Date"

End Date read as "Submission Date" Supplier read as "Contractor/bidder" Vendor read as "Contractor/bidder"

Vendor Quotation read as "Contractors Bid/Offer" Purchaser read as "Department/BMC"

I. Before entering online tendering process, the contractors should complete the registration process so as to get User ID for E-tendering links. For this, the contractors can access through Supplier registration via BMC Portal.

There are two methods for this registration :(II and III)

II. Transfer from R3 (registered contractors with BMC) to SRM

a. Contractors already registered with BMC will approach to Vendor Transfer cell.

b. Submit his details such as (name, vendor code, address, registered Email ID, pan card etc.) to Vendor transfer cell.

c. BMC authority for Vendor Transfer, transfers the Vendor to SRM application from R3 system to SRM system.

d. Transferred Vendor receives User ID creation link on his supplied mail Id.

e. Vendor creates his User ID and Password for e-tendering applications by accessing link sent to his mail ID.

III. Online Self Registration (Temporary registration for applicant not registered with BMC)

- a. Vendor fills up Self Registration form via accessing BMC portal.
- b. Vendor Transfer cell (same as mentioned above) accesses Supplier Registration system and accepts the Vendor request.
- c. Accepted Vendor receives User ID creation email with Link on his supplied mail Id.
- d. Vendor creates his User ID and Password for e-tendering application.

IV. CONTRACTORS BIDDING: Applicant will Quote and Upload Tender Documents

1. Access e-tender link of SRM Portal
2. Log in with User ID and Password
3. Selects desired Bid Invitation (he wants to bid)
4. To download tender documents contractors will have to pay online Tender fee. The same can be done by accessing Pay Tender Fees option. By this one will be able to pay Tender fee through Payment Gateway-If transaction successful, Contractors can register his interest to participate. Without Registration one cannot quote for the Bid/Tender.
5. Applicant will download Tender Documents from Information from purchaser tab by accessing Purchaser document folder through collaboration 'C' folder link.
6. Applicant will upload Packet **A** related and Packet **B** related Documents in Packet **A** and Packet **B** folder respectively by accessing these folders through "My Notes" Tab and collaboration folder link.
7. All the documents uploaded have to be digitally signed and saved. Contractors can procure there digital signature from any certified CA's in India.
8. Bid security deposit/EMD, if applicable, should be paid online as mentioned in tender.
9. For commercial details (in Packet C) contractors will fill data in Item Data tab in Service Line Item via details and quotes his "Percentage Variation" (i.e.% quoted) figure. (If entered '0' it will be treated as at par. By default the value is zero only.

10. Applicants to check the bid, digitally signs & save and submit his Bid Invitation.
11. Applicants can also save his uploaded documents/commercial information without Submitting the BID for future editing through 'HOLD' option.
12. Please note that "Hold" action do not submit the Bid.
13. Applicants will receive confirmation once the Bid is submitted.
14. Bid creator (BMC) starts Bid Opening for Packet A after reaching End Date and Time and Bid Evaluation process starts.

As per Three Packet system, the document for Packet A & B are to be uploaded by the tenderer in 'Vendor's document' online in Packet A & B. Before purchasing/ downloading the tender copy, tenderer may refer to post- Qualification criteria mentioned in e-Tender Notice.

The tenderer shall pay the EMD/Bid Security through payment gateways before submission of Bid and shall upload the screenshot of receipt of payment in Packet 'A' instead of paying the EMD at any of the CFC centers in BMC Ward Offices.

The e-tender is available on BMC portal, <http://portal.mcgm.gov.in>, as mentioned in the Header Data of the tender. The tenders duly filled in should be uploaded and submitted online on or before the end date of submission. The Packet 'A', Packet 'B' & Packet 'C' of the tenderer will be opened as per the time-table shown in the Header Data in the office of Dy. ChEng.(Rds) WS.

The Municipal Commissioner reserves the right to reject all or any of the e-Tender(s) without assigning any reason at any stage. The dates and time for submission and opening the tenders are as shown in the Header Data. If there are any changes in the dates the same will be displayed on the BMC Portal (<http://portal.mcgm.gov.in>).

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SECTION 6
INSTRUCTIONS
TO APPLICANTS

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INSTRUCTIONS TO APPLICANT

Scope of Application

The Authority wishes to receive Applications for Qualification in order to SELECT experienced and capable Applicants for the Bid Stage.

6.1 TIME PERIOD OF THE PROJECT:

Entire project should be completed and delivered within **24 months (Excluding Monsoon)** of time from the date of award of contract that excludes Monsoon.

The time allowed for carrying out the work as entered in the Tender shall be strictly observed by the Contractor and shall be reckoned from the date as mention in the Work Order is given to the Contractor. The work shall throughout the stipulated period of the Contract be proceeded with all due diligence as time being deemed to be the essence of the contract on the part of the Contractor. On failing to do so, the Contractor shall pay as compensation an amount which shall be governed as per Clause - 8(e) of Standard General Conditions of Contract.

The contractor shall submit road wise time bound programme mentioning the no. of days required for completing the improvement of each road. The start date for each road will be considered from the date of receipt of Traffic police NOC for that road. The road wise time bound programme submitted by Contractor shall be scrutinized and approved by Engineer-in-charge with suitable modifications if any. Such approved time bound programme will be binding on the contractor. The contractor shall complete each of the roads within the time given for the specific road. In case of failure to adhere the timelines on part of the contractor, the following penalties will be levied:

Sr. No.	No. of Days Delayed	Penalty in Rs. Per Day per Road or stretch of road
1	From 1 to 10	5,000/-
2	From 11 to 30	25,000/-
3	From 31 to 60	50,000/-
4	From 61 onwards	1,00,000/-

Penalty will be proposed by SE and AE and approved by Engineer-in-charge [E.E(Roads)]. The delay condonation will be approved by concerned Addl. Municipal Commissioner only.

It shall be binding on the contractor upon The Contractor should submit the bar chart **for entire project** within 3 days of receipt of work order for approval of Engineer-in-Charge. If no communication received from Engineer in Charge within seven days the same is to be considered as deemed approved. The work should be completed as per approved bar chart.

The Contractor is supposed to carry out the work and keep the progress as per approved Bar Chart.

The work comprising of 137 Nos. of roads with carriageway in CC and sidestrip in CC passage in R/South, R/Central & R/North wards of Zone-VII in Western Suburbs are proposed to be improved. The factors influencing time period are:

1. In Western Suburbs area, for most of the time the major work can be executed during night time only.
2. The major transport vehicles are not allowed to enter in BMC limit in daytime which results in delay in getting materials.
3. There are major issues for getting the traffic permissions which are issued in phase-wise manner which further restricts the quantum of work that can be taken up simultaneously.
4. While, for carrying out storm water works lot of practical difficulties arise along with shifting of utilities.
5. It is also pertinent to note that in asphalt road work entire carriageway width is completed in one stretch but in case of CC Pavement work, side strip improvement is started after curing of main C.C bay is completed.
6. C.C pavement can only be opened to traffic after completion of curing period, filling of joints and improvement of side strips is complete in all respects.

Considering all above aspects, time period of **24 months** (Excluding of monsoon) is proposed for the said tender.

The programme for completion of work shall be a part of the Contract Document in the form of Bar Chart / GANTT Chart. The Contractor is supposed to carry out the work and keep the progress as per Bar Chart/GANTT Chart. The Contractor shall complete the work as per the Schedule given in the Contract and the programme submitted by the Contractor.

6.2 Contract Execution

All required documents for execution of the contract shall be submitted within 30 days from the date of issue of letter of acceptance. 2% contract deposit (C.D) shall be

submitted in the form of Demand Draft only and shall be released only after the completion of Defect liability period or Final Bill, whichever is later. This condition supersedes all other clauses mentioned in tender and/or G.C.C with respect to C.D refund. If the documents are not submitted within the stipulated time a penalty of Rs 5000/- per day will be applicable to the contractor. All contract documents need to be duly affixed with stamp duty properly signed along with evidence/proof of payment of security/contract deposit/ within 30 days from the date of letter of acceptance received by him.

6.3 If the amount of the Contract Deposit to be paid above is not paid within 30 days from the date of issue of Letter of Acceptance, the Tender / Contractor already accepted shall be considered as cancelled and legal steps be taken against the contractor for recovery of the amounts.

6.4 The amount of Security Deposit retained by the BMC shall be released after expiry of period up to which the contractor has agreed to maintain the work in good order is over. In the event of the contractor failing or neglecting to complete the rectification work within the period up to which the contractor has agreed to maintain the work in good order, the amount of security deposit retained by BMC shall be adjusted towards the excess cost incurred by the Department on rectification work.

6.5 Action when whole of security deposit is forfeited:

In any case in which under any Clause of this contract, the contractor shall have rendered himself liable to pay compensation amounting to the whole of this security deposit whether paid in one sum or deducted by installments or in the case of abandonment of the work owing to serious illness or death of the contractor or any other cause, the Engineer on behalf of the

Municipal Commissioner shall have power to adopt any of the following process, as he may deem best suited to the interest of BMC –

(a) To rescind the contract (for which recession notice in writing to the contractor under the head of Executive Engineer shall be conclusive evidence) and in that case, the security deposit of the contract shall stand forfeited and be absolutely at the disposal of BMC.

(b) To carry out the work or any part of the work departmentally debiting the contractor with the cost of the work, expenditure incurred on tools and plant, and charges on additional supervisory staff including the cost of work-charged establishment employed for getting the un-executed part of the work completed and crediting him with the value of the work done departmentally in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Executive Engineer as to the costs and other allied expenses so incurred and as to the value of the work so done departmentally shall be final and conclusive

against the contractor.

- (c) To order that the work of the contractor be measured up and to take such part thereof as shall be un-executed out of his hands, and to give it to another contractor to complete, in which case all expenses incurred on advertisement for fixing a new contracting agency, additional supervisory staff including the cost of work charged establishment and the cost of the work executed by the new contract agency will be debited to the contractor and the value of the work done or executed through the new contractor shall be credited to the contractor in all respects and in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Executive Engineer as to all the cost of the work and other expenses incurred as aforesaid for or in getting the un-executed work done by the new contractor and as to the value of the work so done shall be final and conclusive against the contractor.

In case the contract shall be rescinded under Clause (a) above, the contractor shall not be entitled to recover or be paid any sum for any work therefore actually performed by him under this contract unless and until the Executive Engineer shall have certified in writing the performance of such work and the amount payable to him in respect thereof and he shall only be entitled to be paid the amount so certified. In the event of either of the courses referred to in Clause (b) or (c) being adopted and the cost of the work executed departmentally or through a new contractor and other allied expenses exceeding the value of such work credited to the contractor's amount of excess shall be deducted from any money due to the contractor, by BMC under the contract or otherwise, howsoever, or from his security deposit or the sale proceeds thereof provided, however, the contractor shall have no claim against BMC even if the certified value of the work done departmentally or through a new contractor exceeds the certified cost of such work and allied expenses, provided always that whichever of the three courses mentioned in clauses (a), (b) or (c) is adopted by the Executive Engineer, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchase or procured any materials or entered in to any engagements or made any advance on account of or with a view to the execution of the work or the performance of the contract.

6.6 Contract may be rescinded, and security deposit forfeited for bribing a public officer or if contractor becomes insolvent

If the contractor assigns or sublets his contracts or attempt so to do, or become insolvent or commence any proceeding to get himself adjudicated and insolvent or make any composition with his creditors, or attempt so to do or if bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given promised or offered by the contractor or any of his servants or agents through any public officer, or person in the employ of BMC/Govt. in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract the Engineer In-charge may thereupon, by notice in

writing rescind the contract and the Security Deposit of the Contractor shall thereupon stand forfeited and be absolutely at the disposal of BMC and the same consequences shall ensure as if the contract had been rescinded under above clause J hereof; and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

6.7 Submission of Tenders

A. PACKET - A

The Packet 'A' shall contain legible scanned copies of original of following documents: -

- a) The tenderer shall upload the screenshot of receipt of payment of EMD.
- b) Valid Registration Certificate.
- c) Valid Bank Solvency Certificate of Minimum Solvency amount as governed by Registration Rules in force for respective Class of Contractor for Civil and M&E works.
- d) A document in support of Registration under Goods & Service Tax (GST).
- e) Legible scan of original valid 'PAN' documents and photographs of the individuals, owners, Karta of Hindu undivided Family, firms, private limited companies, registered co-operative societies, partners of partnership firms and at least two Directors, if number of Directors are more than two in case of Private Limited Companies, as the case may be. However, in case of Public Limited companies, Semi Government Undertakings, Government Under- takings, no 'PAN' documents will be insisted.
- f) Latest Partnership Deed in case of Partnership firm duly registered with Chief Accountant(Treasury) of BMC.
- g) The Registered power of attorney shall be submitted in the name of person who is submit-ting the bid.
- h) The bidders shall categorically provide their Email-ID in packet 'A'.

NOTE:

- i. If the tenderer(s) withdraw tender offer during the tender validity period, his entire E.M.D shall be forfeited.
- ii. Only original document scans shall be uploaded, and they may be cross-checked against original during scrutiny. Bidder shall present his original documents for checking to the Engineer in-charge of tender scrutiny as and when directed.
- iii. If it is found that the tenderer has not submitted required documents in Packet "A" then, the shortfalls will be communicated to the tenderer through e-mail only and compliance required to be made within a time period of **three working days** otherwise they will be treated as non-responsive.
- iv. Maximum two (2) shortfalls will be allowed for curable defects. For more than

- two (2) nos. of shortfalls, 2% of EMD will be forfeited for each shortfall thereafter. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender document, if applicable. However, such shortfalls shall be considered on merits by concerned respective Dy.ChE(Roads) at the time of bid scrutiny & his decision will be treated as final.
- v. At the time of tender scrutiny if the documents uploaded on-line in Packet A & B:
 - (a) do not open or are found corrupted **OR**
 - (b) if the folders are found empty in the SRM system then in such case, it shall be treated as non-submission of the documents and the 2% of E.M.D. per document required in the respective folder will be forfeited. In such cases, for the calculation of this forfeiture amount, the concession of maximum two (2) shortfalls allowed for curable defects will not be considered.
 - vi. **Bidders shall cross-check the uploaded documents by downloading the same at their end prior to submission of bid. No representation/complaint shall be entertained in this regard under any circumstances.**
 - vii. The bidder has to submit compliance of all shortfalls within the stipulated time period on-line only through email.
 - viii. In case of non-curable defects, the same will not be communicated and the bid will be made non-responsive and their 10% of E.M.D. will be forfeited. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender document, if applicable.
 - ix. **ALL DOCUMENTS UPLOADED IN PACKET-A MUST BE ACCURATE AND COMPLETE IN ALL RESPECTS. BIDDERS ARE REQUESTED TO UPLOAD ALL DOCUMENTS WITH HIGHEST PRECISION.**
 - x. **ANY DISCREPANCY IN THE ABOVE WILL BE TREATED AS SHORTFALL.**
 - xi. Any Forged / Fake document found uploaded then bidder will be disqualified and debarred from all bidding process for two years.

B. PACKET - B

The Packet 'B' shall contain legible scanned copies of original of following documents: -

- a) The list of similar type of works as stated in para '2.1' of Post qualification successfully completed during the last seven years in prescribed proforma, in the role of prime contractor. Information furnished in the prescribed proforma (Proforma - I) shall be supported by the scan of original certificate. Scan of Original Documents stating that it has successfully completed during the last seven years at least one contract of similar works as stated in para '2.1' of post qualification.
- b) Annual financial turnover for preceding five financial years as certified by Chartered Accountant preceding the Financial Year in which bids are invited. Scan of Original of

- Applicants duly audited balance sheet and profit and loss account for the preceding five financial years (i.e 2021-22,2020-21, 2019-20, 2018-19, 2017-18) & (Proforma – II)
- c) Scan of Original documents stating that, it has access to or has available liquid assets, unencumbered assets, lines of credit and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements for the subject contract in the event of stoppage, start-up, or other delay in payment, of the minimum 15% of the cost of the work tendered for, net of the tenderer's commitment of other contracts (Certificate from Bankers / C.A./Financial Institution shall be accepted as an evidence).
 - d) The bidder should, undertake their own studies and **furnish with their bid**, a detailed construction planning, and methodology supported with assessment study of requirements of equipment/plants & machineries to allow the employer to review their proposal.
 - e) Details of ownership of 80% of Machinery and Equipment's as listed in the modified Annexure-H **The bidder should categorically specify the bid no, work code no and ward/zone in which he has submitted the ownership documents of the bids. For any machinery only RC book / Ownership documents shall be considered as adequate proof of ownership along with photocopy of PAN card of owner / firm / company. The 80% of one set of machinery submitted for any work will be considered exclusively for said work only (For each work separate exclusive set of machinery shall be required).**
 - f) **The Exclusive Assured Access for balance 20% machinery mentioned in Annexure-H if applicable.**
 - g) **Assured access to mechanized concreting paver machine and relevant machinery and undertaking on Rs 500 stamp paper for providing the machinery required for mechanized concreting as directed by Engineer-in-charge. Non-submission of same shall be treated as non-curable defect.**

[I] For Cement-Concrete Road Works: -

For C.C Road/C.C Passage/TWT/ UTWT works, it is mandatory that bidders should submit in Packet-B, the Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond, in prescribed format annexed in the **Annexure -G**, with BMC registered (i) **RMC plant owner**, regarding supply of materials as per BMC specification.

[II] For Asphalt/Mastic Road Works

For Asphalt/ Mastic asphalt road/junction works, it is mandatory that bidder should submit in Packet-B, the Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond, in prescribed format annexed in **Annexure-G**, with BMC registered (i) RMC Plant Owner (ii) Asphalt plant owner who have arrangement for Mastic asphalt production regarding supply of materials as per BMC specification for that work code only.

- 1) The Bidder shall allow BMC staff access to his plants, machinery for checking of their functioning & materials used for manufacturing and for quality management purposes as and when directed by the Engineer-in-charge.
- 2) In case of otherwise eligible bidders who have not complied with the submission of Irrevocable Undertaking cum Declaration cum Indemnity bond in Packet-B. (Non-submission of said Undertaking will not be considered as a Shortfall) and they **all will be allowed to submit the same within seven days from the opening of Packet-C. However, failure to submit within seven days will be treated as non-curable defect and the bidders EMD will be forfeited.**

Note:- If L-1 bidder fails to comply with the submission of the said Irrevocable Undertaking cum Declaration cum Indemnity bond with plant owners then in that case submission of the undertaking complied by the next successive eligible bidders within the requisite time i.e. 7 days will be taken into the consideration.

Thereafter, negotiations will be done with the said successive / responsive bidder with respect to his quoted rate.

Note:- For e.g. if L-1, L-2, L-3 fails to submit said Registered Irrevocable Undertaking cum Declaration cum Indemnity bond and if L-4 have submitted the said Undertaking then he will be called for the negotiation with respect to his quoted rates.

- h) The list of the ‘Technical Personnel’s’ with their qualification, working in the tenderer’s establishment as per proforma IV. It shall also be ensured that the bidder appoints requisite staff only from reputed and approved universities along with minimum relevant site/work experience required for carrying out good quality work as per specification. The engineering staff of bidders is to be qualified from recognized universities/ technical board such as AICTE approved colleges, universities, AMIE, Deemed Universities. Diploma from MSBTE or any other state technical board. And the bidder should upload only such certificates of engineering staff **failing which 10% EMD will be forfeited.**
- i) Details of works in hand (Proforma VI-A & VI-B) (original), along with Scan of Original work orders & work completion / Performance Certificate stating percentage of works completed (in terms of Physical & Financial) or part thereof.
- j) Statement showing assessed available Bid Capacity.
- k) The undertakings of Rs.500/- stamp paper as per the proforma annexed in ‘Annexure B & C’ **each separately.**
- l) Annexure E, Annexure F & Annexure G [Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond with BMC registered plant owners] and other undertakings needs to be submitted on Rs.500 stamp paper **each separately.**
- m) Annexure A and Form of tender shall be submitted on bidder’s letter head.
- n) The bidder should, undertake their own studies and **furnish with their bid**, a detailed construction planning and methodology supported with assessment study of requirements of equipment/plants & machineries to allow the employer to review their

proposal. The tenderers shall upload work plan as per the following outline:-

1. BAR chart/ PERT/ CPM chart showing the completion of work within prescribed timeperiod, considering major activities.
 2. Organizational set up envisaged by the contractors.
 3. Plant & equipment proposed to be deployed for this work.
 4. Site Offices and Laboratories proposed to be set up.
 5. A note on how the whole work will be carried out (work plan including methodology).
 6. Quality management plan.
 7. All the activities included in the Scope of Work shall be covered in the work plan.
- o) The tenderer shall submit the signed copies of all addendums & corrigendum's.
- p) The Litigation History: - As approved by Hon'ble M.C., the clause of Litigation history be included as part of SBD as below:-

The bidder shall disclose the litigation history in Packet 'B' under the head "Details of Litigation History".

If there is no Litigation History, the bidder shall specifically mention that there is no Litigation History against him as per the clause of Litigation History. In case there is Litigation History –

Litigation History must cover – Any action of Blacklisting, debarring, banning, suspension, deregistration and cheating with BMC, State Govt., Central Govt., or any authority under State or Central Govt./Govt. organization initiated against company, firm, directors, partners or authorized signatory shall be disclosed for last 5 years from the date of submission of bid. Also, bidder shall disclose the litigation history of last 5 years from the date of submission of bid about any action like show cause issued, blacklisting, debarring, banning, suspension, deregistration and cheating with BMC and BMC is party in the litigation against the company, firm, directors, partners or authorized signatory for carrying out any work for BMC by any authority of BMC and the orders passed by the competent authority or by any Court where BMC is a party. While taking decision on litigation history, the concerned Chief Engineer or D.M.C. or Director, as may be the case, should consider the details submitted by bidder and take decision based on the gravity of the litigation and the adverse effect of the act of company, firm, directors, partners or authorized signatory on the BMC works which can spoil the quality, output, delivery of any goods or any work execution and within the time frame.(Proforma VII).

Note:

- i.** The Electrical / Mechanical work shall be got carried out by the civil contractors through the contractors registered with BMC. in Electrical Category. Information about the registered contractors shall be obtained from the office of the Ch.E. (M&E)/ E.E. (Monitoring & Registration Cell). Attested scanned copy of the valid registration certificate in Electrical Category shall be uploaded with the tender along with the undertaking from the registered Electrical Contractor stating his willingness to carry out the tender work.
- ii.** The successful bidder shall submit valid registration certificate under E.S.I.C., Act 1948, if the tenderer has more than 10 employees /persons on his establishment (in case of production by use of energy) and 20 employees/persons on his establishment (in case of production without use of energy) to BMC as and when demanded. In case of less employees/persons mentioned above then the successful bidder has to submit an undertaking to that effect on Rs. 500 stamp paper as per circular u/no. CA/FRD/I/65 of 30.03.2013.
- iii.** The successful bidder shall submit valid registration certificate under E.P.F. & M.P., Act 1952, if tenderer has more than 20 employees/persons on his establishment, to BMC as and when demanded. In case if the successful bidder has less employees/persons mentioned above then the successful bidder has to submit an undertaking to that effect on Rs. 500 stamp paper as per circular u/no. CA/FRD/I/44 of 04.01.2013.
- iv.** The successful bidder shall submit an undertaking on Rs.500/- stamp paper, mentioning that the work will be completed within stipulated time period as mentioned in the tender. The annexure F regarding completion of project on time needs to be submitted on Rs. 500 stamp paper.
- v.** Only original document scans shall be uploaded, and they may be cross-checked against original during scrutiny. Bidder shall present his original documents for checking to the Engineer in-charge of tender scrutiny as and when directed.
- vi.** Maximum two (2) shortfalls will be allowed for curable defects. For more than two (2) nos. of shortfalls, 2% of EMD will be forfeited for each shortfall thereafter. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender document, if applicable. However, such shortfalls shall be considered on merits by concerned respective DyChE(Roads) at the time of bid scrutiny & his decision will be treated as final.

- vii. At the time of tender scrutiny if the documents uploaded on-line in Packet A & B:-
- a. do not open or are found corrupted **OR**
 - b. if the folders are found empty in the SRM system then in such case, it shall be treated as non-submission of the documents and the 2% E.M.D. per document required in the respective folder will be forfeited. In such cases, for the calculation of this forfeiture amount, the concession of maximum two (2) shortfalls allowed for curable defects will not be considered.
- viii. **Bidders shall cross-check the uploaded documents by downloading the same at their end prior to submission of bid. No representation/complaint shall be entertained in this regard under any circumstances.**
- ix. The bidder has to submit compliance of all shortfalls on line only within the stipulated time period of three working days
- x. In case of non-curable defects, the same will not be communicated and the bid will be made non-responsive and their 10% E.M.D. will be forfeited. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender document, if applicable.
- xi. **ALL DOCUMENTS UPLOADED IN PACKET B MUST BE ACCURATE AND COMPLETE IN ALL RESPECTS. BIDDERS ARE REQUESTED TO UPLOAD ALL DOCUMENTS WITH HIGHEST PRECISION.**
- xii. **ANY DISCREPANCY IN THE ABOVE WILL BE TREATED AS SHORTFALL.**
- xiii. **Any Forged / Fake document found uploaded then bidder will be disqualified and debarred from all bidding process for two years.**

C. PACKET - C

- a. Online tender filled in either percentage plus or minus (above or below), or at par. (There is no separate provision to quote % in physical form, this is a part in Header Data of online Tendering). For Packet 'C' tenderer(s) will fill data in 'Item Data Tab' in Service Line Item via Details and quotes his percentage variation figures. (If entered '0' it will be treated as 'at par'. By default, the value is zero only).

Note: In case of rebate/premium of 15% and above as quoted by the tenderer, the rate analysis of major items covering 90 % of the estimated cost of the bid shall be submitted by L1 and L2 bidder after demand notification by e-mail to bidders by concerned Dy.Ch.Eng. A sample format for rate analysis is annexed at Annexure D. Also, summary sheet of the all cost incurred for bidder as per rate analysis of items covering 90% of the estimated cost has to be submitted.

Rate Analysis in prescribed format shall be submitted online to the engineer-in-charge (within 3 working days) from the date of communication on email to submit rate analysis, failing which EMD will be forfeited, and the bid will be

rejected, and next successful bidder will be considered. Thereafter, negotiations will be done with the said successive / responsive bidder with respect to his quoted rate.

Bidder to note that correct ASD needs to be paid as per clause 6.10(B).

6.8 BID SECURITY OR EMD

- The Bidder shall furnish, as part of the Bid, Bid Security/EMD, in the amount specified in the Bid Data Sheet. This bid security shall be in favor of the authority mentioned in the Bid Data Sheet and shall be valid till the validity of the bid.
- The tenderers shall pay the EMD online instead paying the EMD at any of the CFC centers in BMC Ward Offices. Bidder to note that correct ASD needs to be paid as per clause 6.10(B).
- Any bid not accompanied by an acceptable Bid Security and not secured as indicated in sub-clause mentioned above, shall be rejected by the Employer as non-responsive.
- The Bid Security/EMD of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposits.
- The Bid Security/ EMD of L-3 bidder shall be refunded after the finalization of the successful lowest bidder for the work, EMD of the other bidders shall be released within 30 days, on merits. However, the EMD/ASD submitted by the L-2 bidder will be returned after obtaining Standing Committee/Administrator's Resolution.
- In case, the successful bidder becomes non-responsive or successful bidder withdraws the bid or is unwilling to extend the bid validity period, in such circumstances, if L-2 bidder is agreeable to extend the bid validity period and ready to deposit the requisite amount of bid security/ EMD and ASD to the department within the stipulated time period i.e. 15 days, the department will process further as per normal procedure.
- Various relaxations given as per guidelines/directives vide relevant circulars i.e.
 - (a) CAF/Project/21 dt. 07.09.2020,
 - (b) CA(F)/Project/32 of 26.10.2020,
 - (c) CA(F)/Project/36 dt. 07.12.2020,
 - (d) CA(F)/Project/41 dt. 09.02.2021,
 - (e) CA(F)/Project/42 dt. 09.02.2021

issued by BMC will not be applicable henceforth and SBD conditions shall prevail.

- **EMD & ASD shall be paid online at the time of bidding and the submission will be insisted as per SBD conditions.** Bidder to note that correct ASD needs to be paid as per clause 6.10(B).
 - All other deposits will have to be deposited in the form of Demand Draft (D.D.) Only, as per prevailing SBD conditions.
 - **The Bid Security may be forfeited:**
 - a) If the Bidder withdraws the Bid after bid opening (opening of technical qualification part of the bid during the period of Bid validity;
 - b) In the case of a successful Bidder, if the Bidder fails within the specified time limit to:
 - i. Sign the Agreement; and/or
 - ii. Furnish the required Security Deposits.
1. The cases wherein if the shortfalls are not complied by a contractor, will be informed to Registration and Monitoring Cell. Such non-submission of documents will be considered as 'Intentional Avoidance' and if three or more cases in 12 months are reported, shall be viewed seriously and disciplinary action against the defaulters such as banning/de-registration, etc. shall be taken by the registration cell with due approval of the concerned AMC.
 2. Maximum two (2) shortfalls will be allowed for curable defects. For more than two (2) nos. of shortfalls, 2% of E.M.D will be forfeited for each shortfall thereafter.
 3. At the time of tender scrutiny if the documents uploaded on-line in Packet A & B:-
 - (i) do not open or are found corrupted **OR**
 - (ii) if the folders are found empty in the SRM system then in such case, it shall be treated as non-submission of the documents and the 2% of E.M.D per document required in the respective folder will be forfeited. In such cases, for the calculation of this forfeiture amount, the concession of maximum two (2) shortfalls allowed for curable defects will not be considered.
 4. In case of non-curable defects, the same will not be communicated and the bid will be made non-responsive and their 10% of E.M.D. will be forfeited. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender document, if applicable.
 5. **Rate Analysis in prescribed format shall be submitted online (within 3 working days) from the date of communication on email to submit rate analysis, failing which EMD will be forfeited, and the bid will be rejected, and next successful bidder will be considered. Thereafter, negotiations will be done with the said successive / responsive bidder with**

respect to his quoted rate.

6. In case of non-workable rate analysis and misleading information submitted by the bidder, EMD shall be forfeited, and bid will be rejected.

Note:

I. Curable Defect shall mean shortfalls in submission such as:

a. Non-submission of following documents,

- i. Valid Registration Certificate
- ii. Valid Bank Solvency.
- iii. Goods & Service Tax Registration Certificate (GST).
- iv. PAN documents and photographs of individuals, owners, etc.
- v. Partnership Deed and any other documents
- vi. Undertakings as mentioned in the tender document.
- vii. Litigation History.
- viii. Bank Guarantee (B.G) as per clause 2.5

Note: Maximum two (2) shortfalls will be allowed for curable defects. For more than two (2) nos. of shortfalls, 2% of EMD will be forfeited for each shortfall thereafter.

II. Non-curable Defect shall mean

- a. Inadequate submission of EMD amount.**
- b. In-adequacy of technical and financial capacity with respect to Eligibility criteria as stipulated in the tender. (Non-submission of supporting documents for Technical & Financial eligibility i.e. Financial Balance Sheets, Work Experience Certificates etc.)**
- c. Non-submission or Wrong calculation of Bid Capacity, (if bidder uploaded bid capacity calculation which after scrutiny by department is found to be incorrect then in such case, if bid capacity calculated by department, based on documents uploaded by bidder only, is equal or more than required bid capacity of the said bid then bidder will be treated as responsive.)**
- d. No proper submission of work experience certificates, Balance Sheets, Annexures and Proformas in Section 15 and other documents, etc.**
- e. Inadequate submission of ASD amount.**
- f. Non-submission of ownership proof of 80% of the set of machinery as per Annexure-H.**
- g. Assured access to mechanized concreting paver machine and relevant machinery.**

- h. Undertaking on Rs 500 stamp paper for providing the machinery required for mechanized concreting as directed by Engineer-in-charge

Note: In this case shortfalls will not be intimated to bidders and bid will be made non-responsive and 10 % of E.M.D. will be forfeited of the bidder.

6.9 BID VALIDITY

Bids shall remain valid for a period of not less than one eighty (180) days after the deadline date for bid submission specified in Bid Data Sheet. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his bid security for a period of the extension.

6.10 SECURITY DEPOSIT, PERFORMANCE GUARANTEE AND DEFERRED PAYMENT

A. Security Deposit

The security deposit shall mean and comprise of

- I) Contract Deposit and
- II) ~~Retention Money.~~

I) Contract Deposit(C.D) –

The successful tender, here after referred to as the contractor shall pay an amount equal to two (2) percent of the contract sum in shall be paid within thirty days from the date of issue of letter of acceptance. The said Contract Deposit will be paid in form of **Demand Draft (D.D.)** only.

II) Retention Money- Not Applicable

(Note: Since, 80:20 deferred payment scheme is implemented hence, retention money will not be deducted from the running bill.)

B. Additional Security Deposit (ASD)

The bidder is directed to Submit the ASD as applicable in form of Demand Draft, which is to be submitted within office hours one day before opening of “Packet-C” to the respective Head Clerk (Expenditure) of road division in sealed envelope. If ASD is not applicable then the bidder shall submit sealed envelope mentioning on their letterheads “ASD not applicable”. ASD shall be applicable as under:

The ASD shall be paid is applicable as under:

Sr. No.	Rebate quoted by contractor	ASD applicable
1	Upto 12% rebate	No ASD
2	12.01% to 20% rebate	1% of Estimated Cost for each percentage & part thereof above 12% rebate
3	20.01% rebate and above	8% of estimated cost + (2% of estimated cost extra for each percentage and part thereof over and above 20% rebate)

For Example for 100 Crores work

[A] If bidder quotes 12.06% below then ASD will be ass under

- (i) % quoted below 12% = 0.06%
- (ii) $0.06\% \times 100 = 6$ Lakhs

[B] If Bidder quotes 15.30% below then ASD will be ass under

- (i) % quoted below 12% = 3.30%
- (ii) $3.30\% \times 100 = 3.3$ Crores

[C] If Bidder quotes 22.60% below then ASD will be ass under

- (i) % quoted below 12% and upto 20% = 8%
- (ii) % quoted below 20% = 2.60%
- (iii) $8 \times 100 + 2 \times 2.6\% \times 100 = 13.20$ Crores

If the bidder fails to submit the sealed envelope as mentioned above at least one day before opening of ‘Packet C’ up to 4 pm then the E.M.D. of the respective bidder will be forfeited and the company with their Directors /Partners and other companies with the said Directors / Partners will be further debarred from any tendering process for the period of at least 2 years-

C. Performance Guarantee- Deleted

Note:

1. Contract sum shall mean amount after application of rebate/premium as quoted by the contractor with contingencies only and excluding price variation.

~~2. DELETED~~

~~3. DELETED~~

~~4. DELETED~~

~~5. DELETED~~

D. Deferred Payment

Payment of bill will be under 80:20 deferred payment scheme, i.e 80% amount of the certified bill will be released immediately, 20% amount will kept in deposit and released as under:

1. Final bill shall be submitted by the Bidder within one year from the start of DLP of that respective road, failing which a penalty of Rs. 1,00,000/- will be deducted from the balance payment of contractor per year till the submission of the Final Bill of that road.

e.g (i) if bill is submitted anytime after 12 months upto 24 months then Rs 1,00,000/- will be deducted as penalty.

(ii) if bill is submitted anytime after 24 months to 36 months then Rs 2,00,000/- will be deducted as penalty.

(iii) if bill is submitted anytime after 36 months to 48 months then Rs 3,00,000/- will be deducted as penalty and so on till submission of Final bill with all records.

If Final bill is submitted, then –

a. **For C.C Roads with 10 years DLP:-**

i) 20% withheld amount will be released as under: -

2% will be released each year from the completion of work/submission of final bill, whichever is later, @ 2% every year for 10years of DLP.

Note:- It is mandatory to carry our Roughness Index (R.I.) once after completion of the work and thereafter every year till the completion of the DLP.

b. **For C.C Passage /Roads & Junctions in Mastic and other roads with 5 years DLP**

i) 20% withheld amount will be released as under: -

For 5 years DLP Roads 6 % payment will be released each year on completion of 3rd and 4th years of DLP and 8% will be released on the completion of 5th year of DLP or after Final Bill whichever is later.

Note:- It is mandatory to carry our Roughness Index (R.I.) once after completion of the work and thereafter every year from the start of 3rd year till the completion of the DLP.

c. **For Roads in Asphalt mix and other roads with 3 years DLP**

ii) 20% withheld amount will be released as under: -

For 3 years DLP Roads 10 % payment will be released each year on completion of 2nd and 3rd years of DLP or after Final Bill whichever is later.

Note: It is mandatory to carry our Roughness Index (R.I.) once after completion of the work and thereafter every year from the start of 1st year till the completion of the DLP.

2. Since, 80:20 deferred payment scheme is implemented, retention money will not be deducted from the running bill.
3. The 20% deferred payment shall not be released against Bank guarantee (B.G) at any stage of contract.

E. Refund of Security Deposit:-

I. Refund of Contract Deposit

The Contract Deposit shall be released after completion of final bill or within 30 days after 5th year of DLP whichever is later (in case of 10 years DLP), 3rd year of DLP (in case of 5 years DLP) and after issue of 'Defect Liability Certificate' (in case of 1 or 2 or 3 years DLP), whichever is later, subject to no recoveries are pending against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Contractor. No claim shall be made against the Balance Contract Deposit after the issue of Defects Liability Certificate.

Contract deposit, ASD and any other deposits will neither be accepted in Bank Guarantee (B.G) nor will be released against B.G.

II. Refund of Retention Money [Not Applicable]

Since, 80:20 deferred payment scheme is implemented, retention money will not be deducted from the running bill.

III. Refund of Additional Security Deposit

The additional security deposit shall be released within 30 days of issue of 'Certificate of Completion' with respect to the whole of the Works. In the event the Engineer issues a Taking-over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Contractor.

Contract deposit, ASD, Performance Guarantee (P.G) and any other deposits will neither be accepted in Bank Guarantee (B.G) nor will be released against B.G.

Refund of Performance Guarantee

The Deposit on account of performance guarantee shall be released within 30 days of completion of Defects Liability Certificate subject finalization of final bill whichever is later and no recoveries are pending against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Contractor

❖ Time of Refund for works having 10 years DLP

Deposits refunded after completion	After 5 years of DLP or after Final bill whichever is later	After completion of DLP
ASD	CD	P.G.

❖ Time of Refund for works having 5 years DLP

Deposits refunded after completion	After 3 years of DLP or after Final bill whichever is later	After completion of DLP
ASD	CD	PG

❖ Time of Refund for works having 1 or 2 or 3 years DLP

Deposits refunded after completion	After Completion of DLP or after Final bill whichever is later
ASD	CD + PG

IV. Refund of Deferred Payment

Payment of bill will be under 80:20 deferred payment scheme, i.e 80% amount of the certified bill will be released immediately, 20% amount will kept in deposit and released as mentioned above in clause 6.10D.

6.11 Legal + Stationary Charges: (As per applicable circular)

Successful tenderer shall pay the Legal Charges + Stationary charges as per Circular no Legal/10318 dated 24.03.2022:-

Contract Value						Legal+ Stationery Charges
from	Rs.	10,001/-	To	Rs.	50,000/-	Nil
from	Rs.	50,001/-	To	Rs.	1,00,000/-	Rs.6290/-
from	Rs.	1,00,001/-	To	Rs.	3,00,000/-	Rs.10,380/-

Contract Value						Legal+ Stationery Charges
from	Rs.	3,00,001/-	To	Rs.	5,00,000/-	Rs. 12,470/-
from	Rs.	5,00,001/-	To	Rs.	10,00,000/-	Rs. 14,510/-
from	Rs.	10,00,001/-	To	Rs.	20,00,000/-	Rs. 16,570/-
from	Rs.	20,00,001/-	To	Rs.	40,00,000/-	Rs. 18,660/-
from	Rs.	40,00,001/-	To	Rs.	1,00,00,000/-	Rs. 20,720/-
from	Rs.	1,00,00,001/-	To	Rs.	10,00,00,000/-	Rs. 24,450/-
from	Rs.	10,00,00,001/-	To	Rs.	20,00,00,000/-	Rs. 28,220/-
from	Rs.	20,00,00,001/-	To	Rs.	30,00,00,000/-	Rs. 31,980/-
from	Rs.	30,00,00,001/-	To	Rs.	40,00,00,000/-	Rs. 35,740/-
from	Rs.	40,00,00,001/-	To	Rs.	50,00,00,000/-	Rs. 39,470/-
from	Rs.	50,00,00,001/-	To	Rs.	1,00,00,00,000/-	Rs. 47,000/-
from	Rs.	1,00,00,00,001/-	To	Rs.	2,00,00,00,000/-	Rs. 58,270/-
from	Rs.	2,00,00,00,001/-	To	Rs.	3,00,00,00,000/-	Rs. 65,770/-
from	Rs.	3,00,00,00,001/-	To	Rs.	4,00,00,00,000/-	Rs. 75,120/-
from	Rs.	4,00,00,00,001/-	To	Rs.	5,00,00,00,000/-	Rs.84,510/-
from	Rs.	5,00,00,00,001/-	To	Rs.	Any higher amount	Rs. 93,920/--(Maximum)

The tenderers are requested to note that stationary charges as given in the table above will be recovered from the successful tenderer for supply of requisite prescribed forms for preparing certificate bills in respect of the work.

6.12 Stamp Duty:

It shall be incumbent on the successful tenderer to pay stamp duty on the contract wherever applicable & as per applicable circular.

i. As per the provision made in Article 63, Schedule I of Maharashtra Stamp Act 2015, stamp duty is payable for “works contract” that is to say, a contract for works and labour or services involving transfer of property in goods (whether as goods or in some other form) in its execution and includes a sub-contract, as under:

a)	Where the amount or value set forth in such contract does not exceed rupees ten lakh.	Five Hundred rupees stamp duty
b)	Where it exceeds rupees ten lakhs	Five hundred rupees plus one hundred rupees for every Rs.1,00,000/- or part thereof, above rupees ten lakh subject to the maximum of rupees twenty five lakh stamp duty.

- ii. The successful bidder shall enter into a contract agreement with B.M.C. within 30 days from the date of issue of Work Order and the same should be adjudicated for payment of Stamp Duty by the successful bidder.
- iii. Further shortfall if any, in amount of stamp duty paid as against prescribed amount for the documents executed in Mumbai City & Mumbai Suburban District be recovered from the concerned work contractors and to deposit the deficit or unpaid Stamp Duty and penalty by two separate Demand Draft or Pay Order in favor of “Superintendent of Stamp, Mumbai” within 15 days from intimation thereof.
- iv. All legal charges and incidental expenses in this respect shall be borne and paid by the successful tenderer.
- v. As per para 54 read with 40(b) of Maharashtra Stamp duty Act, Stamp duty at the rate of 0.5 % is payable on total amount of Bank Guarantee submitted by Tenderer. If the time period of the Bank Guarantee is required to be extended then the same shall be considered as new Bank Guarantee and 0.5% stamp duty shall be applicable for the same.

6.13 IMPORTANT DIRECTIONS

1. All the information uploaded shall be supported by the corroborative documents in absence of which the information uploaded will be considered as baseless and not accepted for qualification criteria. All the documents shall be uploaded with proper pagination. The page No. shall be properly mentioned in the relevant places.

The information shall be uploaded in the sequence as asked for with proper indexing etc. The Bidder shall be fully responsible for the correctness of the information uploaded by him.

2. Applicants/Bidders shall refer <http://portal.mcgm.gov.in/tenders> for “The Manual of Bid- Submission for Percentage Rate/Item Rate Tender Document.” The detail guidelines for creation and submission of bid are available in the referred document.

Any queries or request for additional information concerning this TENDER shall be submitted by e-mail to dychews01.roads@mcmgm.gov.in. " W-415: Improvement of various Roads in CC/CC Passage and Sidestrips in CC Passage Road in R/South, R/Central & R/North Ward in Zone-VII in W.S." Any changes in mail ID will be intimated on the portal.

3. In case of **Equal Percentage** of lowest bidders (L1), the allotment of work shall be done by giving 48 hrs. (**2 working days**) from the day of opening of packet C **on same BID-Document number for re-quoting** and such development needs to be done by IT department in BMC's SRM system. **Till such development is made; 'Sealed Bids' shall be called from the bidders quoting the same rates i.e. L1.**

In case of equal percentage of lowest bidders is obtained even after re-quoting, then the successful bidder will be decided by lottery system by Ch.Eng. (Roads & Traffic).

The bidder shall need to submit the additional ASD if applicable within 7 days after receipt of notification issued by concerned Chief Engineer.

4. The Vigilance department will carry out the random site inspections of road work as per the modalities of Vigilance department issued u./no. ChE/Vig 3170/B dated 21.09.2016 and ChE/Vig/1490/B dated 02.08.2018 or as per prevailing guidelines.

Rate Analysis:

- 1) Rates shall be quoted in the prescribed format as directed by the engineer-in-charge only, without changing the quantity and units. Bidder shall fill the rates only, strictly no change in units, quantity or any other changes of the rate analysis allowed. Rate Analysis in prescribed format shall be submitted online (within 3 working days) from the date of communication on email to submit rate analysis, failing which 10% EMD will be forfeited.
- 2) Overheads and Profit percentage shall be as per contractors working
- 3) Bidder/s shall submit basic current market rate of individual items like cement, Coarse aggregate, fine aggregate, Tor steel, mild steel, Bitumen, Bricks, etc. (included in BOQ) separately.
- 4) Description used in prevailing USoR for particular item shall be used as it is, while submitting Rate Analysis online. In case of any discrepancy bidder may approach to engineer in charge for formats of rate analysis, unit, quantity mentioned herein. decision of Engineer in charge will be binding on bidder
- 5) **If the quantities in above format/sequence are changed or if any discrepancies are found, the rate analysis submitted by bidder/s will be treated as non-workable and further action as per this bid document shall be initiated.**
- 6) Bidder/s shall submit quotation/consent from the reputed / registered supplier's / manufacturers of various materials along with the address, GST registration certificate and email-id of supplier/s.
- 7) Bidder/s shall submit the GST Certificate of the supplier/s of various material.

SECTION 7

SCOPE OF WORK

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SCOPE OF WORK

7.1 General: - This contract covers the following works:

a) **Improvement/Construction of roads:** - This work is predominantly a rigid pavement work. It includes improvement of roads in cement concrete (C.C, UTWT, TWT, CC passage) laying of SWD (in cast-in-situ or Precast sections)/Sewer line/drain, cross drainage, improvement of footpaths, lane markings, etc. as detailed in the B.O.Q. of the tender document. The work shall be executed by the contractors as per tender and the quality of the work shall be ensured by the contractor. Also, the contractor shall maintain the project road in traffic worthy conditions/ motorable by using asphalt mixes during intermittent monsoon after notification of award & till completion of contract period or completion of entire work whichever is later, at his own cost. The time allotted for completion of the subject works is as mentioned in Annexure 'A'.

NOTE:-The project road shall be only that part of road on which the improvement /repairs are to be carried out in accordance with the drawings /specifications.

b) Maintenance of work improved under the project work -

The road stretches improved under the project work including laying of SWD (in cast-in-situ or Precast sections)/Sewer line/drain, footpaths, cross drainage works, road signboards, lane markings etc. shall be maintained as per relevant conditions in the specifications as specified in condition no. 11.7 of specification and selection of material.

c) Reinstatement of trenches -

The trenches excavated by various utilities including BMC's Departments on the project roads, during the contract period shall be reinstated by the contractor, as per existing policy guidelines and relevant specifications and as directed by the Engineer including intervening monsoon. The work of reinstatement of trenches during contract period has to be carried out and paid at the contract rates, as per new trenching policy guidelines approved vide AMC/ES/7725/II dtd.18.12.2014, AMC / ES / 9923 / II dtd.20.07.2015, AMC / ES / D / 867 dtd. 04.07.2016, Ch.E./1165/Rds/MC dtd 29.07.2016 & MGC/F/4255 dtd. 10.08.2017, ChE/160/SR/Rds & Tr. Dated 15.06.2021 and subsequent amendments if any. However, During DLP, contractor shall have to reinstate the trenches for which contractor shall be paid as per deferred payment ratio as per the contract.

The reinstatement of trenches on improved roads during defects liability period shall be carried out as per specification in condition no 11.8 of Section 11.

Improvement of roads: -

a. Various roads falling under the area of contract shall be improved/ constructed by the contractor under this project work. The improvement work shall comprise of

excavation, Asphalt, GSB/WMM, DLC, C.C., P.Q.C/UTWT, Mastic Asphalt, etc.

- b. Some of the stretches/junctions may have to be improved with paver blocks/Mastic Asphalt/UTWT, as per the directions of the Engineer.
- c. The works of construction of storm water drains, laying of SWD line/drain, repairs to S.W.D. (wherever required), R. C. C Box Drains, covering of storm water drains with R.C.C.slab and precast frames and covers, water entrances, cross drainage works etc. shall also be required to be carried out under the project work.
- d. Construction of new footpaths, and shall be carried out as a part of project work. Footpath should be provided with ramp for physically challenged persons & tree guards.
- e. Existing/Buried Manholes/chambers, **if detected** during the progress of work, shall be raised/ lowered to final formation level.
- f. Road name boards and other signages, direction boards shall be fixed as per the guidelines and designs as contemplated in 'Catalogue for street furniture available in the office of Dy. Ch. E.(Traffic).
- g. Road markings, lane markings, Painting of kerbs and central dividers.
- h. Repairing potholes and rough/bad patches on the project roads free of cost, during the contract period including intervening monsoon.

This includes the following: -

(a) Cutting the potholes to square or rectangular shape down up to the base course level to the affected depth and filling up with metal and stone powder during wet spell i.e. rains and with cationic emulsion & **bituminous cold mixes** during dry spell of monsoon, compacting the same as per the specifications & as directed by the Engineer.

(b) Sealing of cracks developed, as per specifications & as directed by the Engineer.

(c) Repairs to settled portions as per the specifications & as directed by the Engineer.

7.2 Maintenance of Work improved under the contract:

a. This includes emergency, routine, periodic (whenever required) maintenance of road stretches

i.e. to be improved under the project.

b. The improved road stretches and other co-lateral works are liable for free of cost maintenance during defect liability period (DLP) as specified in ANNEXURE 'A'. It is

essential that the im-proved road stretches and other co-lateral works shall be maintained & kept in serviceable conditions during the defect liability period. (The monitoring will be under respective ward office).

c. The maintenance shall include activities such as -

1. Repairing local potholes, bad patches.
2. Sealing of cracks.
3. Repairs to settled road surfaces.
4. Repairs to settled portions.
5. Maintaining Municipal assets provided by the contractor on the project road stretches in neat condition, by inspecting periodically.
6. Maintaining road markings, road signs as per annexure-A.
7. Maintaining the kerbs, dividers, with jointing as per annexure-A.
8. Repairs to Accident damaged Assets (The payment may be considered on the basis of report from the police and in accordance with the terms of clause for trench reinstatement).
9. Maintaining (i.e. any structural defects) laterals & water entrances of storm water drains including replacing missing/broken covers which are constructed by the contractor on improved roads till DLP.
During DLP period damaged, broken, unsound, defective SWD frames and covers shall be replaced immediately without waiting for intimation from B.M.C., B.M.C. does not bind itself to intimate the contractor. The contractor shall regularly inspect sites and take necessary steps. In case if any SWD chamber or sewer manhole cover is missing then it will be liability of the contractor to replace the missing covers within 24 hours. In case of any mishap or accident on account of inaction from the contractor in this context, Contractor will be wholly and solely responsible.
10. Paver Blocks -The undulations in the paver blocks and the settlement of the paver blocks shall be rectified. Broken pieces shall be replaced.
11. The contractors shall inform about any trenches on the project road without due permission from concerned authority of BMC.
12. The rough or scoured surface of Concrete/Asphalt roads as may occur in the defect liability period (DLP), should be reconstructed/resurfaced by the Contractor (successful bidder) free of cost. On failure to comply these conditions, the work shall be got done at the risk and cost of contractor (successful bidder) and a penalty of equivalent amount should also be recovered from any dues payable to the contractors by BMC of the instant contract.

In case of Mastic Asphalt surface, the condition of resurfacing the entire pavement at the end of Defect Liability Period shall be applicable only in the event the roughness Index mentioned in Tender condition No. 10.89, is not observed upto

the mark.

13. The DLP Of various types of Road surfaces and road components shall be as per Annexure-A.

14. During the Defect Liability Period above checks will be conducted by the QMA appointed by BMC or BMC Engineers before releasing the proportionate deferred amount during the DLP. For the defects occurred the same shall be rectified by the contractor at their risk and cost. Further penalty equivalent to the cost of the work at the prevailing USOR shall be imposed on the contractor.

Note: Tenderer shall consider the above maintenance cost (Except reinstatement of trenches) while quoting the percentage as no separate payment will be made for above maintenance works.except where clearly mentioned otherwise.

7.3 Reinstatement of Trenches -

The contractor will have to reinstate the trenches excavated on project roads and if necessary, carry out the laying / shifting / repairs of utilities on the project roads during the contract period including intervening monsoon as specified in the tender.

The reinstatement of trenches carried out on improved roads during defects liability period will be paid as per rates prevailing at the time of execution with quoted percentage of this tender.

The 80% amount of the payment will be made after satisfactory reinstatement of the trench and balance 20% will be released proportionately during Defect Liability Period of the said trench.

The contractors shall inform about any trenches on the project road stretches, during the contract period and on the improved roads during the contract period without the permission of respective A.C. of concerned ward/Ch.E. (Rds. & Tr.). The contractor shall prevent unauthorized trenching and the same will be the responsibility of the contractor up to date of completion. The reinstatement of trenches carried out on improved roads during defects liability period will be paid as per USOR schedule prevailing at the time of execution of reinstatement work with quoted percentage of this tender.

The work site will be under contractor's control during the contract period and up to date of completion. A letter to that effect will be issued and one copy will be forwarded to respective ward office.

7.4 "Defects/Pothole/Trench detection report" and "Defect/Pothole/Trench Rectification report":

During the entire Defect Liability Period (DLP) the contractor shall keep such suitable no. of labours, personnel, Engineers, Machinery etc. as he may be directed by Site Engineer/Asst. Commissioner of concerned Ward for detection of unauthorized trenching & prompt rectification of defects/potholes/reinstatement of trench. A penalty of Rs. 5000/-per day per Defect/Pothole/Trench if not attended in stipulated time, shall be

imposed in addition to other penalties mentioned in this document/ G.C.C/S.C.C, for late rectification of defect/Pot- hole/Trenches.

Note:

- 1) All the works contained in the scope of work shall be carried out strictly as per the relevant specifications applicable as attached OR referred to in this e-tender document OR as directed by The Engineer.
- 2) The above is general description of the scope of work & actual work shall be governed by B.O.Q. and as directed by the Engineer.
- 3) The Contractors shall execute the work even on Saturdays, Sundays, Holidays & in night-time without any break in the continuity of work, the contractor shall arrange exclusive labour force for this purpose along with all resources.
- 4) The total working days shall, however, be counted as per the Contract period mentioned in this Tender Document & as per G.C.C. 2016. Failure of the Contractor to observe the continuity of work will be viewed seriously & heavy penalty will be imposed for every default.
- 5) **If there is variation in specifications as mentioned in IRC, MORTH, BMC specification, description in BOQ and any tender condition then the stringent of all these shall prevail. The decision of Chief Engineer(Roads & Traffic) in this regard shall be final.**

7.5 List of Roads to be improved:

Sr.No.	Name of Road	Ward
1	L.T.Road, Dahisar West	R/North
2	Rangnath Keskar Road, Dahisar(W)	R/North
3	Yashwantrao Tawade Road, Dahisar(W)	R/North
4	Pramila Nagar Road, Dahisar(W)	R/North
5	I.C.Colony Road no. 1 & 6 from Kinny Corner to Sweetland Apt. , Dahisar(W)	R/North
6	I.C.Colony Road no.2 from Priya Bunglow to Adhunik Greens, Dahisar(W)	R/North
7	I.C.Colony Road no.3 from Chheda Apt. to Silva Croft Bldg., Dahisar(W)	R/North
8	I.C.Colony Road no.5 from Aberu Niketan Bldg. to Shubh Jeevan Circle, Dahisar(W)	R/North
9	Road from Shubh Jeevan Circle to T.P.Hotel, Dahisar(W)	R/North
10	Road from Ashirwad Hotel to Uncles Corner, Dahisar West	R/North
11	Aurbindo Road , Dahisar West	R/North
12	Road from Gawade Nagar , Dahisar East	R/North
13	Sant Namdev Road, Dahisar(E)	R/North
14	C.S.Road, Dahisar East	R/North
15	D.N.Dubey Road, Dahisar(E)	R/North
16	S.V.Road, Dahisar East	R/North
17	Sant Meerabai Road, Dahisar(E)	R/North
18	S.N.Dubey Road , Dahisar(E)	R/North
19	Vaishali Nagar Road Junction, Dahisar(E)	R/North
20	V.V.Pednekar Road, Dahisar(E)	R/North
21	Dalvi Road, Dahisar West	R/North
22	Suhasini Pawskar Road from Crystal Building to Narayan Tea Centre Road, Dahisar(E)	R/North
23	Madhuban Society Road from MTNL to Madhuban Society	R/North
24	Hanuman Tekdi to Sant Ramdas Road, Dahisar(E)	R/North
25	S.N.Dubey Road to Shingte Compound , Dahisar(E)	R/North
26	C.S. Road No. 03 Road from Bablipada junction to Ocean Heaven Hotel, Dahisar(W)	R/North
27	C.S. Road No. 02 (Hambirrao Mohite Marg) Road from Sanji Hotel to Matruchhaya College, Dahisar(W)	R/North
28	C.S. Road No. 04 Guruvaryada Dadoji Konddev Marg from Pritam CHSL to Krishna Vatika CHSL	R/North
29	Jaywant Sawant Road, From below Sudhir Phadke Bridge to Ranchhoddas Road junction Dahisar West	R/North
30	I.C.Colony Road no.4 from Unity House to Anchorage Building, Dahisar(W)	R/North
31	I.C.Colony Road (Road in front of YCMA Ground) from Shubh Jeevan Circle to HCG Cancer Hospital , Dahisar West	R/North
32	Holy Cross Road from Link Road to Kinny's Corner Bldg. , Dahisar West	R/North
33	I.C.Colony Cross Road no. 3 from Kinny Corner bldg. to Chheda Apartment , Dahisar(W)	R/North
34	Navyug Nagar road from Namita Hospital to Ajanta bldg., Dahisar East	R/North
35	Parbat Nagar road, Dahisar East	R/North
36	Y.R. Tawde road, Dahisar East	R/North
37	Laxmi Lad Road, Dahisar East	R/North
38	Kulupwadi road from WE Highway to Joshi Nivas/Hanuman Mandir	R/Central

Sr.No.	Name of Road	Ward
39	Tata Power Road	R/Central
40	DAULAT NAGAR ROAD No.10 , Borivali(East)	R/Central
41	CHAUGULE NAGAR ROAD	R/Central
42	DHEERAJ ENCLAVE CROSS ROAD FROM HATHWAY INTERNET TO DEAD END, Borivali(East)	R/Central
43	IBPS ROAD, Borivali(East)	R/Central
44	PRERNA NAGAR ROAD, Borivali(West)	R/Central
45	PRANAY NAGAR ROAD, Borivali(West)	R/Central
46	Kastur Park Layout	R/Central
47	Anil Desai road , Borivali(West)	R/Central
48	Rokadia X Lane (From ROKADIA LANE TO JAIWANT SAWANT ROAD)	R/Central
49	Sumer Nagar Road & cross Road, Borivali(West)	R/Central
50	Rambaug Marg	R/Central
51	Kasturba Road no 3	R/Central
52	LINK ROAD SHIMPOLI TO MAHAVEER NAGAR , Borivali(West)	R/Central
53	Old MHB Colony Int.Rd (bldg no.5 to Sadanand Park)	R/Central
54	RDP-10 Charkop, Sector-6 (Link Road to RDP 7)	R/Central
55	Maharashtra Nagar Road no. 1	R/Central
56	Maharashtra Nagar Road no. 2	R/Central
57	Maharashtra Nagar Cross Road	R/Central
58	Joggers Park Road Including RDP 13th Road	R/Central
59	RDP 12th Road	R/Central
60	Ansal Vihar Road including RSC 01	R/Central
61	Eksar Road , borivali (west)	R/Central
62	Road From Yogi Nagar To Derasar, borivali (west)	R/Central
63	Road From Dehrasar to Dead End, Borivali (West)	R/Central
64	Royal Complex Road, borivali (west)	R/Central
65	Saibaba Nagar Main Road Side Strip	R/Central
66	Pandit Malharao Kulkarni Marg (19th Road) Side Strip	R/Central
67	TPS 1st Rd (R.M. Bhattad Road) Side Strip	R/Central
68	Daulat Nagar Road no 7 Borivali (E)	R/Central
69	Jain Mandir Road, Daulat Nagar Broivali (E)	R/Central
70	Daulat Nagar Road no 4 Borivali (E)	R/Central
71	Daulat Nagar Road no 6 Borivali (E)	R/Central
72	Daulat Nagar Road no 8 Borivali (E)	R/Central
73	Daulat Nagar Road no 9 Borivali (E)	R/Central
74	Samata Nagar Road, Kandivali (E)	R/South
75	Damu Nagar Road, Kandivali (E)	R/South
76	Akurli Road, Kandivali (E)	R/South
77	13.40 wide DP Road, Sai Nagar, Kandivali (W)	R/South
78	Dingeshwar Talav Road, Kandivali (W)	R/South
79	Shantilal Modi Road, Kandivali (W)	R/South
80	Dada Save Road, Ashok Nagar, Kandivali (E)	R/South
81	RajguruFly Over Road, Kandivali (E)	R/South
82	Cemetary Road, Kandivali (W)	R/South
83	Atmiya Marg, Ashok Nagar, Kandiali (E)	R/South

Sr.No.	Name of Road	Ward
84	Samir Chandavarkar Road, Kandivali (W)	R/South
85	Bandarpakhadi road, Kandivali (W)	R/South
86	Shantilal Modi Cross road no.02, Kandivali (W)	R/South
87	Akurli Road, Kandivali (E)	R/South
88	Saraf Choudhary Road, Thakur Complex, Kandivali (E)	R/South
89	M.G. Cross Road No. 3, Kandivali (W)	R/South
90	Industrial Road, Kandivali (W)	R/South
91	Jawahar Ramsumer Yadav Road, Kandivali (W)	R/South
92	Gaondevi Road, Kandivali (W)	R/South
93	Narayan Joshi cross road no. 1, Kandivali (W)	R/South
94	Narayan Joshi cross road no. 2, Kandivali (W)	R/South
95	Mathuradas Road No.1, Kandivali (W)	R/South
96	Ram gully Road, Kandivali (W)	R/South
97	Hemukalani main Road, Kandivali (W)	R/South
98	Pravin Rami Marg, Kandivali (W)	R/South
99	RSC-19, charkop, kandivali (W)	R/South
100	RSC-05 charkop, kandivali (W)	R/South
101	RSC-14, charkop, kandivali (W)	R/South
102	Lokhandwala Complex road, Kandivali (E)	R/South
103	Thakur Stadium Road, Kandivali (E)	R/South
104	Farid Estate Road, Kandivali (E)	R/South
105	Chatrabhuj School road, Kandivali (E)	R/South
106	Samta Nagar Road no.3, Kandivali (E)	R/South
107	Samta Nagar Road No. 1, Kandivali (E)	R/South
108	Samta School Road, Samata Nagar, Kandivali (E)	R/South
109	Gaurav Garden road, Kandivali (W)	R/South
110	Industrial Road, Kandivali (W)	R/South
111	Anita Nagar Road, Kandivali (E)	R/South
112	Akurli cross road no.03, Kandivali (E)	R/South
113	Gokhale road, Kandivali (W)	R/South
114	Datta Mandir Road, Kandivali (W)	R/South
115	Industrial Road, Kandivali (W)	R/South
116	Industrial Road, Kandivali (W)	R/South
117	Arvind Malkhan road, Kandivali (W)	R/South
118	18.30 mtr Proposed DP Road, Jankalyan Nagar Road, Kandivali (W)	R/South
119	RSC-12 charkop, kandivali (W)	R/South
120	RSC-07 charkop, kandivali (W)	R/South
121	RSC-10 charkop, kandivali (W)	R/South
122	Pancholiya School Road, Kandivali (W)	R/South
123	Side strip of S.V. road, Kandivali (W)	R/South
124	Side strip of M.G. Road , kandivali (W)	R/South
125	Side strip of Akurli road, kandivali (E)	R/South
126	Side strip of 120 feet road, Thakur Village, Kandivali (E)	R/South
127	Side strip of Babrekar Nagar Road (Kamraj Marg) Kandivali (W)	R/South
128	Side strip of Dr. Babasaheb Ambedkar Road, Kandivali (W)	R/South
129	Side strip of K.T. Soni Road, Kandivali (W)	R/South

Sr.No.	Name of Road	Ward
130	Side strip of Borsapada Road, Kandivali(W)	R/South
131	Side strip of 90 feet wide DP road, Thakur Complex, Kandivali (E)	R/South
132	Side strip of Kadsiddheshvar road Kandivali(W)	R/South
133	Side strip of Shankar Lane, Kandivali (W)	R/South
134	Side strip of Damu Anna Date Road, Kandivali (W)	R/South
135	Ganpati Tower Junction, Thakur Village, Kandivali (E)	R/South
136	Side strip of Mahavir Nagar Road, Kandivali (W)	R/South
137	Kamla Nehru Main road and Vasanji Lalji Road, Kandivali (W)	R/South

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SECTION 8

BILL OF QUANTITIES

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BILL OF QUANTITIES

Name of Work: W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S (Bid No 7200034714)

Estimated Cost: Rs. 1073,93,65,732/-

BOQ of the roads to be improved is uploaded separately.

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SECTION 9

GENERAL

CONDITIONS OF

CONTRACT

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General Conditions of Contract

- Standard General Conditions of Contract for Construction works 2016 is applicable.
- The amendments for the condition no. 5(c) of Standard General conditions of Contract is made and same is given in this tender condition no. 10.31 of Chapter No. 10 Special Condition of contract.
- All the conditions in G.C.C. shall stand modified in accordance with GST Act.
- The Janata Accident Policy is not required as per the circular u/no.Dir./E.S.&P/15/V dated 12.06.2018.
- **The Mobilization advance shall be applicable to this contract as per condition 12 of Standard General Conditions of Contract for Construction works 2016.**
- **The Taxes condition shall stand applicable as per circular no CA/F/Project/25 dated 12.07.2022.**
- **Arbitration & Jurisdiction shall be applicable as per circular u./no. MGC/F/8659 dated 07.09.2017**
- **All Circulars and modifications to GCC issued from time to time shall be applicable to this tender.**

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SECTION 10
SPECIAL CONDITIONS
OF CONTRACT

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SPECIAL CONDITIONS OF CONTRACT

Note:- the conditions in this tender prevail.

10.1 This contract envisages four parts -

a) Improvement/Construction of Roads and Junctions in UTWT/TWT/C.C. Passage/C.C Pavement/Asphalt / Mastic Asphalt.

b) Maintenance of roads improved under the project work.

c) Reinstatement of trenches on the roads under project work and during Defect liability Period (DLP)

d) Laying of various utilities as proposed in the tender and noticed and meet with during execution of work.

10.2 The Ch.E. (Rds. &Tr.) will be the Engineer of the contract and Engineer's representative will be from the office of respective Divisional offices of Dy.Ch.E.(Rds).

10.3 In the event of any discrepancy/contradiction between these conditions/ directions and general specifications for road works and general conditions of contracts for civil works, these special conditions/ directions shall supersede corresponding provisions elsewhere and shall prevail.

10.4 Permissions:

10.4.1 The contractors shall have to obtain permission from the traffic police department well in advance either for closing down the road partially/fully or for diversion of traffic for execution of the work. The conditions stipulated in such NOC's shall be complied with; failure in compliance shall be penalizing by Rs. 5000/-per lapse per site. The work may be required to be executed in phases as per traffic police permission. The contractors should therefore consider this factor while quoting.

10.4.2 The contractor shall have to obtain all the permissions of the concerned authorities out- side B.M.C. required for carrying out the work. Only recommendatory letters will be issued by BMC.

10.5 BMC proposes to implement "Geo- tagging" system for the work execution in future. Contractors shall install/ implement the same as per norms as and when introduced by BMC. No separate payment will be made to the contractors for the same.

- 10.6 Methodology of the work, safety manual and quality assurance plan shall be submitted before commencement of the work with copy at site office, failing which a penalty of Rs. 25000/- per month shall be imposed on the contractors.

The contractor should appoint a road safety engineer for the project.

- 10.7 Quantities of all items provided (i.e. anticipated) in the B.O.Q. may not be required to be executed depending upon the site conditions. The tenderer shall not be entitled for any compensation on this account. Before starting the work, contractor shall consult with the Site Engineer and shall take actual measurements on the site for procurement of material.

- 10.8 The contractor shall procure requisite material required for the work from manufacturers with I.S.I. certificates and according to B.M.C. specifications/approved list wherever applicable.

- 10.9 BMC may appoint one dedicated, full-time QMA for achieving 100% supervision. QMA staff, BMC staff will be deployed at various plants and material sources at time of procuring the material to ensure proper quality as and when required. The bidder/contractor and plant owner shall extend full-cooperation to such QMA staff, BMC staff as directed by Engineer-in-Charge. The contractor shall carry out any survey; test etc. as directed and adverse decision there of including rectification shall be carried out by the contractors at their cost. **BMC may appoint QMA for inspection of DLP roads, the contractor shall extend full cooperation to the QMA during DLP period.**

- 10.10 i) All material required for the work can be stacked near the site of work in such mannerso as not to cause any inconvenience to the pedestrian and vehicular traffic etc. If no space is available on site then tenderer shall make his own arrangement for stacking of material etc. No extra payment will be made on this account.

ii) The surplus excavated material from the site shall be removed by the contractor freeof cost within 24 hours. If it is removed to Municipal dumping grounds, the necessary tipping charges at the dumping ground, as applicable, shall be borne by the contractor.

iii) The contractor should note that during the execution of the work, debris etc. dumpedon the public streets/places will have to be removed immediately after completion of the work as per direction of the Engineer, failing which the same will be got removed at

their risk and cost and penalty in addition to equal to the expenditure incurred shall be charged and recovered from contractors.

iv) The site shall be cleared by removal of surplus material on or before 15th of May

every year or as directed by Engineer in charge.

- 10.11 The Penalty equivalent to **cost of defective work** or Rs. 10,000/- (whichever is higher), per day/lapse/site workspace, in accordance to the gravity of default communicated in writing. This tender condition will be applicable during entire period of contract including the DLP. In case the contractor does not rectify the defect within prescribed time show cause will be issued to the contractor at Dy Ch E level.

The penalty and cost of rectifying the defective work if carried out from other agency will be deducted from the bill/retention money/deposits available in any form available with BMC. Maximum penalty as per tender conditions as well as redoing the defective work will be enforced.

In case of repeated lapses on part of bidder, stern action such as termination of contract, de-registration will be explored in addition to severe financial penalties

NOTE: - This decision will not be arbitral at all.

The above-mentioned condition will be in addition to the relevant condition in the General Condition of contract (GCC) regarding cancellation of contract in full or partly final decision of disputes, difference of claims raised by the contractor or relating to any matter out of contract.

- 10.12 On Completion of the work, the contractors shall furnish free of cost 3 sets of final completion drawings in AutoCAD along with the soft copy in CD, pen drive, showing all the details (i.e. including utility mapping) within 1 months of completion of works checked and signed by the Engineer. The payment of final bill shall be made to the contractors after receipt of above sets.

10.12a) It shall be sole responsibility of the contractor to carry out the total station survey of all the roads included in the tender work and to update the road profile in Total Station Survey data provided in AUTO CAD sheets by Roads department. The updated road profile Total Station data shall be provided in AUTO CAD sheets and SHAPE files, to the concern Executive Engineer as per circular u/no. Ch.E./261/Rds. & Tr. Dated 14.08.2019.

- 10.13 All the asphalt works required to be done under the captioned contract shall be got executed with the specified asphalt mixes manufactured in B.M.C. approved asphalt plants only.

- 10.14 All the Paver blocks/ Kerb stones/ Water tables/ Frame & covers required for the work to be carried out under the captioned contract shall be procured from the specified manufacturers registered with B.M.C. only and also the interlocking paver blocks shall have BIS registration.

10.15 The RMC works required to be done under the captioned contract shall be got executed with pre-qualified RMC plant by BMC. Preference will be given to contractor using pre-qualified facility by RMCMA. Where the facility does not have such pre-qualification, the RMC producers shall get it pre-qualified from BMC in accordance with two QA manuals viz. QC Manual Part I including check list (125 items) and guidelines for QC and QA Part II, submitted by RMCMA. The said manuals are available in the divisional offices for reference.

10.16 While executing the work the bidder has to protect the trees as per Urban Trees and paving Guidelines, copy of which is available with the office of Ch.E. (Rds. & Tr.).

10.17 **Traffic Management:** -

10.17.1 The contractor shall have to provide adequate number of wardens as per requirement of Traffic Police Deptt. at the contractor's cost.

10.17.2 Traffic signs – Temporary traffic and construction signs are to be provided during construction and maintenance operations for traffic diversion and pedestrian safety as per Traffic Diversion Plan approved by the Engineer.

10.17.3 The contractor shall display the boards stating information of the name of the work, date of starting, date of completion, name of the Dept. and contact telephone no's of Contractor's Engineer

10.18 While constructing/improving footpath, ramps for disabled are required to be provided for safe crossing of disabled persons across these roads as per the provision of IRC-103, 2012 i.e. Guidelines for pedestrian facilities at every carriageway entrance, roads, bus stops, schools, govt. offices etc.

Bollards and road furniture, direction boards etc. shall be as per drawings in IRC or Modified drawings in tender.

10.19 The full-time services of the Personnel Team of the contractor is mandatory during the entire period of the project.

10.20 Diameter of the S.W.D. pipe and sizes of manholes provided in the bill of Quantities of the tenders are tentative and are likely to change at the time of execution according to the site conditions. Contractors shall have to carry out such extra items in S.W.D. works as per S.W.D. Schedule rates of B.M.C. prevailing at the time of execution of work adjusted by rebate/premium quoted by the contractors and no fair rate will be admissible for the same.

10.21 The photographs of work sites & works as and when directed by Engineer are to be taken. A new Digital Camera of Min 10 Mega Pixels shall be provided in the site

office for the said purpose. The Photographs should be arranged in the Register showing original site position and finished site position of the same location. The register should be duly signed by site-in-charge and contractor fortnightly.

“Contractor shall supply video CD/DVD along with digital photographs before starting of work, during execution and completed work of all activities of the work as directed by Engineer-in-charge during occurrence of the project and editing them to a video film/CD/DVD of playing time not less than 90 minutes and upto 180 minutes as directed by Engineer-in-charge. Such as film shall be suitably narrative and titled indicating chainage, locations, activities. The video CD/DVD shall be of acceptable quality and shall be capable of producing colored pictures. This is incidental to work and no payments shall be made for the same”.

BMC will not make any separate payment; contractor shall note the same and quote accordingly.

10.22 Price Variation –

Please refer standard Bid Document Clause no. 79,

Price variation shall be permitted for the following materials. The basic rates adopted in the USoR 2018 road and Traffic schedule applicable to this tender are as under –

- | | |
|------------------------|--|
| (1) Cement | -Rs 4812.50/- per M.T |
| (2) Steel - Mild Steel | - Rs. 40,000/- per MT |
| HYSD Steel (Fe415) | - Rs.42,000/- per MT |
| Fe500D Steel | - Rs.44,500/- per MT [Common Schedule of USoR 2018] |
| Structural Steel | - Rs. 43,000/- per MT [Common Schedule of USoR 2018] |
| (3) Bitumen- | |
| a) VG-10- | Rs.24.24 per Kg. |
| b) VG-30 - | Rs.25.04 per Kg. |
| c) VG-40 - | Rs.26.54 per Kg. |

Note: -GST shall be applicable as per Government norms

The Contractor shall be reimbursed or shall refund to the Corporation as he case may be the variation in the value of the work carried out from time to time, depending on whether the prices of material and labour as a whole rise or fall, and the method adopted for such computations shall be as given below, it being clearly understood that the contractor shall have no claim for being reimbursed on the ground that the

price of a particular material or group of materials have risen beyond the limits of the presumptions made in the following paras, however, no price variations shall be made applicable for contracts upto 12 months:

Controlled materials: Price variations shall be permitted in respect of these materials the price level of which is controlled by the Government or its agency. The rate ruling on the date of submission of the tender shall be considered as the basic price of such material for adjustment. Any variation in this rate shall be considered for reimbursement to the contractor or refund to be claimed from the contractor as the case may be. The contractor shall, for the purpose of adjustment submit in original the relevant documents from the suppliers.

1. The price variation for labour & other materials (excluding (1), (2), (3) above), shall be considered as per Clause No. 10.b of Standard G.C.C. 2016.
2. Price variation for the extended time period may be considered on its merits if the reasons for the delay in completing the work are not attributed to the contractor.
3. Cost incurred in conversion of bitumen grade:

The tenderer shall note that extra cost incurred by him for conversion of low-grade bitumen to higher grade bitumen will not be paid separately. While bidding, the tenderer should quote the rate accordingly.

The price escalation will be payable as under:-

- (a) In First year: - from 2nd quarter to 4th quarter – 1.25% price variation per quarter (Total $1.25 \times 3 = 3.75\%$) [Max 3.75% of the cost of work executed in 1st year].
- (b) In Second Year: - = 5% (@ 1.25% in each quarter) [Max 5% of the cost of work executed in 2nd year]
- (c) In Third Year : = 5% [Max 5% of the cost of work executed in 3rd year]
- (d) After 3rd year no price escalation.

10.23 Tenderers are requested to take cognizance of Child Labour Act and shall not employ child Labourers on site.

10.24 Every running bill shall be submitted by the contractor to the official email id of concern Executive Engineer with detailed measurement in soft copy along with hardcopy on letterhead in the office of Zonal DyChE(Roads). Measurement book with relevant records for every running bill shall be prepared and submitted in hardcopy by the contractor and concerned sub-Engineers monitoring the work projects to the concerned Executive Engineer through AE In-charge with detailed measurement in the soft copy also. The contractor shall keep the certified hard copy of said softcopy for the office record till the submission of final bill.

10.25 Contractor shall handover the hard copy of said with softcopy for the office record.

10.26 Prevailing policies of BMC at the date of submission of tender as well as at relevant time during execution of the work in future will govern.

10.27 All the excavated material belongs to the Brihanmumbai municipal corporation and therefore shall be the property of Brihanmumbai municipal corporation. It will be mandatory on the part of contractor to use this material in the execution of works under the instant contract or on any other sites of other contracts of BMC as directed by the Engineer; if the quality of material is as per the specification. If any excavated material is used on construction sites then the remainder surplus earth OR if no excavated material is utilized on Municipal works then the entire surplus excavated earth/any material including de-silted material shall be removed /transported from sites by the contractor within 24 hours; for which no separate payment will be made. If Municipal dumping grounds are not available for removal of surplus earth then the contractors shall make his own arrangements for removal/ transportation/disposal of excavated surplus earth or any other material at his own risk and cost.

It shall be distinctly noted that BMC will not make any payment towards removal/transportation/disposal of surplus excavated earth or any other material including de-silted material from construction site to either any Municipal dumping ground (If made available) or to contractor's own dumping facility. The contractors shall take into account the fact while quoting. "The circular regarding Waste management Rules 2016 vide under no. MGC/F/7076 dated 30.08.2018 & Circular u/no. Dy.Ch.E./SWM/3957 dtd. 28.09.2018 will be applicable to this tender."

10.28 Royalty Payment on excavated material as per statutory requirement:

As per legal opinion taken from law officer, BMC Royalty charges are not payable for excavation. However, if and when royalties become payable to the government authority on excavated material as per statutory requirements, the payment shall be made by the contractor and shall also submit copy of royalty challans to BMC office.

10.29 If the contractor excavates certain portion of the road and fails to reinstate the same within the stipulated time limit, as per the programme and or before 31st of May OR any other date specified by the BMC authority; the reinstatement will be got carried out at contractor's risk and cost through other agency in addition to further penal action.

10.30 All trenches taken in connection with the work should be sufficiently barricaded, as

specified.

- 10.31 The noise level shall be maintained within the permissible limit in Silence zone area during the construction activities by the Contractors, as per the notification dated 14.2.2000, issued by the Ministry of Environment & Forests.

10.32 Site Office:

On receipt of the work order, the contractor shall have to provide minimum three readymade site office in each ward for B.M.C. Roads staff only, in the form of air-conditioned porta cabin OR regular office in building with appropriate insulation from heat, with proper ventilation, before commencement of the work. No separate payment will be made for providing the site office and ancillary items. No permission and space for site chowky will be given /provided on Municipal road/footpath. The contractors have to make their own arrangement on hire/lease for site office as per convenience of Engineer-in-charge and nearby the proposed work sites.

The contractors shall provide following in above stated site office: -

1. An air-conditioned site office of minimum area measuring 30 sq.m. with at least two windows. (if estimated cost of work is more than Rs.100 Crores then additional site offices will be provided as directed by Engineer-in-charge or Dy.Ch.E(Roads)).
2. It should have hygienic toilet facility.
3. Each chowky/Site office should be equipped with electric supply, one latest version of laptop, two latest version of PCs with minimum 27" monitor, 16GB RAM, 1TB SSD, Wifi, 4G/5G data Card equipped with latest versions of MS-Office Suite & Auto CAD, Laser wi-fi duplex printer, flatbed/sheetfed scanner and other peripherals, Broadband internet facility with wi-fi. Air Conditioner, latest Mobile Phone (for uploading photos in pothole app and GIS data in app), Fans, sufficiently big tables, chairs, water filter and cupboard with locking arrangement etc.
4. Site godown & separate cabin adjacent to site office for contractor's staff shall be provided. For any other consultants/Quality monitoring agency staff if appointed by BMC minimum 20 Sq-Mt air-conditioned office should be provided as per requirement as directed by engineer-in-charge.
5. Any other equipments as instructed by Engineer-in-charge.
6. For works having estimated cost upto Rs. 100 Crores, one 4-wheeler good condition air-conditioned SUV vehicles (with minimum 1400 CC engine) arrangement along

with drivers around the clock in two shifts with T-permit shall be provided during entire contract period for site visits and visit to Worli hub, BMC head office, Road Zonal office, ward office, Mantralaya, Govt. offices and agencies. The additional vehicles shall be provided for every hundred crore and part thereof for contracts having estimated cost exceeding 100Crores.

No concession in this regard shall be provided under any circumstances.

The Zonal DyChE (Roads) may decide the distribution of vehicles amongst the site staff in case of any discrepancies.

7. The contractor shall have his project office within BMC limit for execution of this work.
8. Adequate data entry operators, typist, peon etc. shall be made available to BMC Staff as and when required for any work related to the contract.

Note:

- i. If chowky /Site office with necessary requirements is not provided within 15 days after issue of work order, a penalty of Rs. 10,000/- per day will be imposed.
- ii. In case of further delay more than 30 days, a penalty of Rs. 20,000/- per day (i.e. starting from 31st day from issue of work order) will be charged and recovered from E.M.D. OR will be recovered from 1st R.A. Bill whichever is ideal.
- iii. For delay more than 45 days, a penalty of Rs. 50,000/- per day (i.e. starting from 46th day from issue of work order) will be charged and recovered from E.M.D. OR will be recovered from 1st R.A. Bill whichever is ideal.
- iv. If any of the items at Sr. No. 2 to 5 above is not provided, penalty of Rs.1000/- per day/per item, will be imposed and it will be recovered.
- v. Penalty for not providing vehicle along with driver as per Clause 10.31 sub-clause (6) above is Rs. 5000/- per vehicle per shift per day.

10.33 Site Laboratory

1. For work having estimated cost upto Rs. 250 Crores, contractors shall set up one site laboratory in Porta-Cabin with proper ventilation in each ward of size 3 m X 10 m (about 30 sq. m) minimum, easily accessible from work sites before commencement of work at their cost for performing various tests. For estimated cost of work is more than Rs.250 Crores, additional site laboratory will be provided as directed by Engineer-in-charge or Dy.Ch.E(Roads).

At least the following machines and equipment shall be provided therein –

1. Camber Board.
2. Electronic thermometer calibrated at least up to 300 degree Celsius and glass thermometer calibrated up to 200 degree Celsius.
3. Field density bottle along with cutting tray, chisel, hammer and standard sand.
4. Set of Sieves.
5. Bitumen Extraction machine / Bitumen core Cutting Machine
6. Laboratory weighing balance of minimum 20 kg. Capacity, with set of standard weights from 1 gm to 5 kg. & Electronic weigh balance with least count of 1 gm. with electric operated.
7. 3 mtr. Straight edge.
8. Kerosene/ gas stove or electric hot plate / Electric Oven.
9. Curing tank adequate capacities.
10. First Aid Box.
11. Density Gauge - to check the field density of bituminous and sub base layers and soil strata.
12. Flakiness and elongation index Gauges.
13. Compressive strength testing machine (for cube tests) of minimum 150 tonne capacity electrically operated and duly calibrated every 6 months. Testing machine should be maintained properly. In case of failure, the same shall be repaired or replaced within 2 days.
14. Aggregate drying equipments, M.S. Tray of 0.6 M x 0.45 M and Kerosene stove or electric hot plate.
15. Equipment for testing of silt content in sand.
16. Infra Red thermometer calibrated upto 250 degree Celsius
17. Sieve shaker.
18. Kadappa stone platform of size 2.5m. x 0.90m. approx.
19. Digital Density Meter for computing In-Situ Density.

20. Other machines as may be directed by the Engineer.
21. All necessary protective instruments such as Boots, Mask, Protective face shield, Gloves, sanitiser etc. for his staff and for bonafide use of BMC visiting site.
22. **Core cutting machine with appropriate power supply arrangements.**
23. **Any additional machinery / equipment shall be provided at site as directed by Engineer-in-charge.**
24. **All Material Testing shall be carried out in the presence of BMC appointed QMA only.**

All the test records shall be maintained in the site office and made available as and when required.

The engineer of the contractor shall conduct field density test periodically under the supervision of BMC staff/ any other consultant/third party quality auditor/QMA if appointed by BMC and maintain the relevant records.

The laboratory must be established within 15 days after issue of work order. On failure to do so, a separate penalty of Rs.50,000/- per day shall be imposed. All materials used prior to establishment of lab shall be tested in MTL/other BMC approved lab.

NOTE: The bidders must consider the costs of all items in 10.31 & 10.32 above and Labour cess (as applicable) and quote their % accordingly.

10.34 Tax:-

- Contractor has to submit a certificate from Chartered Accountant within 6 months from issue of work order regarding any profit accrued to him to any change in GST rates.
- Till such certificate given by contractor 5% of the bill amount shall be withheld. On receipt of the CA's certificate BMC will adjust the amount in accordance with GST anti-profiting measure and refund the balance amount. The contractor will have to submit CA's certificate before final bill also.
- GST and other state levies/cess which are not subsumed under GST will be applicable. The tenderer shall quote inclusive of all taxes applicable at the time of bid submission. It is clearly understood that BMC will not bear any additional liability towards payment of any Taxes & Duties.
- Wherever the services to be provided by the Tenderers, falls under Reverse Charge Mechanism, the Price quoted shall be exclusive of GST, but inclusive of Taxes/Duties/Cess other than GST, if any.
- Tenderer has to submit irrevocable Undertaking on Rs. 500/- stamp paper as per Annexure- E as per circular no. CA/F/ Project/19 dated 15.09.2017.

Rates accepted by BMC shall hold good till completion of work and no additional claim shall be admissible on account of fluctuations in market rates; increase in taxes/any

other levies/tolls etc. except that payment/recovery for overall market situation shall be made as per Price Variation and if there is any subsequent change (after submission of bid) in rate of GST applicable on the work/services to be executed as per tender, i.e any increase will be reimbursed by BMC whereas any reduction in the rate of GST shall be passed on to BMC as per the provisions of GST act.

• **Any change in GST, after submission of bid shall be applicable as per BMC's prevailing GST guidelines in force.**

10.35 Item of cutting C.I. pipe is also applicable for Ductile Iron Pipe and no fair rate will be admissible.

10.36 The contractors should provide suitably required number of M.S plates on trenches of suitable thickness and size for smooth movement of vehicular traffic as per the requirement of traffic department. Contractor should note that no payment will be made to the contractor for providing, removing and refixing M.S plates on trench etc.

10.37 While excavation of trenches, temporary arrangement like placing of M.S plate over/trenches in front of the entrances of the properties shall be done to allow vehicles/public entry to the properties. No extra payment will be made for this.

10.38 All mild steel specials required for execution of work shall be fabricated from pipes on site. No extra cost will be paid for fabrication of M.S. specials except payment for welding and cutting under respective item of bill of quantities. Also payment for laying of M.S specials in trenches will be made with average length for bends (mean of internal outer length). In case of valve chambers, the required M.S cover plates & M.S sections will be considered for payment on weight basis & it is inclusive of cutting, welding, fabrication, etc, required to complete the work.

10.39 Contractors should note that the work of laying of water main and work of cross connections shall be done simultaneously within the time period. As soon as laying work is started main cross connection shall be carried out and water main shall be flushed as directed.

10.40 Tenderer should note that the supply of material, supply of C.I. specials, M.S specials if included in the Bill of Quantities shall be made available anywhere in the city or suburbs or at the departmental work chowkies as directed. The rates of these supply items include transport, loading, unloading etc. complete.

10.41 Tenderer shall note that H.E's schedule item for Butterfly valve is inclusive of providing and fixing adopter. No extra payment will be made on this account.

10.42 The contractor will be directed by the Engineer to execute the additional emergency work of excavation, laying of water mains, cross connections, construction of S.V. Chambers, concrete blocks, digging trial pits & other related works to H.E. Dept.

etc. to any extent. The quantum of the work of any item may get reduced or increased to any extent. However, the payment of the work shall be made as per terms and conditions of contract.

10.43 Wherever mechanical joints will be used on the water main it will be necessary to fill the gap between the outer edge of the pipe and special / collar/socket with spun yarn as usual.

The costs of fixing mechanical joints are inclusive of said work. No extra amount will be paid on this account.

10.44 The sluice valves, B.F. valves, air valves, fire hydrants etc. to be provided on proposed water main shall be as per relevant I.S./B.M.C specifications and shall be got tested in Municipal Workshop or as directed by the Engineer.

10.45 In case the controlled concrete to be provided at one place/or on particular day, is of small quantity i.e. less than 10 Cu.m, M10 may be considered as equivalent to 1:3:6, M15 as 1:2:4, M20 as 1:1.5:3. The concrete sample/ cubes for M10, M15, M20 shall be tested for every 100 Cu.m quantity irrespective of individual quantity is less than 10Cu.m.

10.46 The contractors shall bring the correct size of metal/material required for construction of water bound layers. The contractors will not be allowed to break stones for preparation of material for water bound layers on site.

10.47 The rate of supplying, loading, transporting on site, unloading and lowering in trenches of all kinds of pipes up to 450 mm dia. is inclusive of cleaning, flushing and testing of water mains up to 10 kg /cm² pressure as directed by the engineer.

10.48 Latest circulars / guidelines should be followed for providing fencing, barricading & lighting.

10.49 Please refer circular No. HE/Cir/13 dated 25.10.05 for specification of M.S, D.I& P.E pipes or amended till date.

10.50 All the sluice valves to be provided shall be GLANDLESS VALVE & preferably with clock wise opening. False Key (i.e. Chavi) required to operate Butterfly valve should be provided with vertical pipe rod and handle as directed by the Engineer. No additional payment for the same will be paid to the tenderer.

10.51 The M.S. Pipes shall be manufactured from plates conforming to IS 2062:2006 (or latest revision)- FE -410. The M.S. pipes shall be fabricated as per IS 3589 (i.e. the fabricated company shall have ISI certificate for fabrication of respective dia. of MS pipes). Spirally welded pipes will not be allowed. Every 10th welding joint of mild steel pipe water main shall be tested in metallurgical laboratory for its strength.

10.52 The contractor has to provide vernier calliper, micro meter and digital instrument for measuring thickness of pipe/ferrule etc.

- 10.53 The tenderer shall note that the tie bars if required to be provided by drilling holes to the existing cement concrete as directed the said work shall be done as directed by the engineer without any extra/additional cost to BMC.
- 10.54 The tenderer shall remove the water, filled for hydraulic testing of the newly laid water main/ water main stretch if required after satisfactory testing at his own cost without claiming any extra /additional cost towards dewatering to BMC. No payment will be made for any kind of dewatering
- 10.55 There is a paucity of space for stacking of pipes. The pipes may have to be delivered and unloaded near the site at locations far away from place of laying the pipes. However, no payment will be made for double handling or transport beyond 500 meters from place of laying. No payment for re-transportation, loading, unloading etc. of pipes or specials received at site for activity beyond 500 meters will be made under any circumstances. The successful bidder will have to manage transportation of pipes and specials etc. to site bearing this constraint in mind.
- 10.56 After completion of work, contractor has to submit detail location of work with three reference point and also of water main laid.
- 10.57 The contract period is exclusive of monsoon. Normally excavations are not permitted in the month of May and Tenderer shall complete refilling and reinstatement of all trenches, and the site shall be cleared in all respect including removal of surplus material on or before 15th May of every year or as directed by Engineer. During the monsoon period, i.e. from closure of excavation if any urgent work is directed, then actual working period of that working period of that work will be considered as working days.
- 10.58 Tenderer at his cost, (i.e. including cost of testing, transportation, loading, unloading of material etc complete) shall test pipes, specials, valves, cement and all other material, as directed by the Engineer. No extra payment will be made on this Account.
- 10.59 Surplus Excavated earth / concrete material / Asphalt cakes / debris on site shall be removed speedily from the site by the contractor as directed by Engineer in charge.
- 10.60 The tenderer shall arrange for and test water main at required pressure as directed at his cost, failing which, same will be carried out by the B.M.C at the risk and cost of the tenderer. After testing of water main, same shall be handed over to competent authority of B.M.C / A.E.W.W of respective wards / A.E.W.W (Maint) by the tenderer as directed.
- 10.61 The rate of supply, loading transporting on site, unloading & lowering in trenches of all kinds of pipes up to 450mm dia. is inclusive of cleaning, flushing & testing of W.M up to required pressure as directed by the Engineer.
- 10.62 If a part of completed line is required for commissioning, the same shall be handed

over to the Corporation after specified testing of water main by tenderer at his cost. No extra payment, for carrying the material by head load to work site, shall be considered under any circumstances.

- 10.63 No core cut sample will be allowed in case of asphalt mix.
- 10.64 Tenderer, at their cost shall submit seven sets of "As laid" drawings of water main showing actual alignment with three point location along with the soft copy within 30 days upon submission of final bill.
- 10.65 The work may be subjected to quality checking by Quality management agency. The representative of the quality management agency appointed for third party audit will supervise the work on day-to-day basis or as directed by Engineer. Tenderer should make necessary sitting arrangement for representative of this agency. The quality management agency will issue instructions through the site in charge of B.M.C. during execution of the work. All the observations, instructions made by the quality management agency & confirmed by B.M.C staff will be binding on the contractor & they should be complied accordingly by the contractor.
- 10.66 Programme of work: If at any stage the previously approved programme is required to be modified, the tenderer shall do so immediately as directed by the Engineer. If it is necessary to close some phase of the work and start a new phase as directed, the tenderer shall do so without claiming any extra payment. The programme shall be reviewed periodically and rescheduled as directed.
- 10.67 Measurement of excavation shall be as per the items in the Bill of Quantities. If the actual excavations are more than the specified, excess excavation shall not be payable. However, if the actual excavations are less than the specified but accepted by the Engineer, the same shall be paid at actual.
- 10.68 The cross connection works etc. are required to be planned in view of the water supply hours in a particular area. Extra payment shall not be considered for works carried out during early, late or night hours. The work of cross connection at the tapping point shall be undertaken immediately after starting the work. Subsequently the work of cross connection at down streamside shall be completed. In any case the cross-connection works shall be completed within one month of start of laying of pipes. If tenderer fail to carry out the work within the non-supply hours, the same will be carried out by the B.M.C at the risk and cost of the tenderer and recoveries shall be effected from the dues payable to the tenderer.
- 10.69 The contractors will have to work during night time also and no extra claims will be entertained. The bidder shall note while working during night hours the machineries used shall comply with the noise levels as mentioned in circular No CE/PD/7788/I/dated 05.11.2008.

10.70 There is a paucity of space for stacking of pipes. The pipes may have to be delivered and unloaded near the site at locations far away from place of laying the pipes. However, no payment will be made for double handling or transport beyond 500 meters from place of laying.

10.71 No payment for re-transportation, loading, unloading etc. of pipes or specials received at site for activity beyond 500 meters will be made under any circumstances. The successful bidder will have to manage transportation of pipes and specials etc. to site bearing this constraint in mind.

10.72 Details of recovery of existing sluice valve replaced by the contractors in the tender work are:

a) For 150mm dia. S.V., recovery will be made at the rate of Rs. 595.00 per number.

b) For 250mm dia. S.V., recovery will be made at the rate of Rs. 2485.00 per number.

c) For 300mm dia. S.V., recovery will be made at the rate of Rs. 3723.00 per number.

10.73 No extra payment will be made for cofferdam, dewatering of any source of water including dewatering of body water from water mains, barricading, removal of silt, removing of earth etc.

10.74 **Special Notes:**

1. The spiral welding is not allowed for M.S pipes.

2. The contractor has to lay as far as possible the water mains at fixed level by diverting the utilities if required. Also preferably bends to be used while laying w.m. should be less than of 45degree. For extra item, if required to execute, any unforeseen work as per site conditions, HE's Schedule of rates will be mainly considered for the payment of work with proper sanction from DMC (SE). However, if the items are not available in HE's schedule those item will be paid as per the items of other BMC Schedule of rates & as stipulated in the relevant clause of G.C.C.

If the items are not available in any of the B.M.C. schedules, then fair rate will be prepared as per prevailing market rate with 15% contractors profit inclusive of overheads and duly got verified by Account Office. For fair rate approval from DMC (SE) shall be obtained before execution of work or afterward as the case may be.

Contractors will be asked to refill the trenches with excavated earth with proper compaction as specified in clause PL 52 of Technical Specifications and reinstatement of Road surface to its original road surface. The width of road surface to be reinstated will be restricted to the trench width plus 15 cm on either side or as directed. The contractor has

to maintain the reinstated trench and reinstated road surface till the defect liability period of the contract period is over at his cost. Any settlement of reinstated trench and/or reinstated road surface is observed during this period shall be redone within 7 days by contractor's at his cost failing which it will attract penalty equivalent to the cost of reinstatement (at quoted rate) of the portion per week or part thereof or as per the policy guidelines for reinstatement of trenches and the same will be recovered from the contractor's bill. However, during monsoon period if any pothole / set-tled trench is observed, it shall be binding on Contractors to attend it within 24 / 48 hours as the case may be and as directed by the Engineer.

10.75 SITE CONSTRAINTS:

The Tenderers / bidders should note following points carefully before quoting:

- 1) For execution of proposed subject work along with its various allied work within contractual period the bidders have to carry out the work at number of locations as directed. Department will apply for necessary permissions to traffic department / Tree Authority / concerned B.M.C ward / any other agency as may be required. However, necessary follow ups shall have to be made by the contractor to get the permissions so as to start & complete the work within stipulated time period. Getting aforesaid permissions will be entirely contractor's responsibility for which the required help will be provided by B.M.C. Also, the directions of authority concerned with regards to traffic diversions / for any other purpose will be binding on the contractor.
- 2) While carrying out the work, contractor has to ensure safety of existing utilities of B.S.N.L, B.E.S.T, TATA, SCADA, M.G.L, optical fibre cables, Sewer lines, S.W.D & Water Mains of Hydraulic Engineer's Department etc. contractor has to take care of all his Machineries and transport vehicles while executing the work without disturbing traffic flow on remaining carriageway of road. If any damage occurs to any immediately and no extra payment will be made to the contractors.
- 3) Existing Cross Drainage work/HT cables /High voltage/oil filled TATA cables/ Drains etc may required to be crossed by way of diversions or by deepening the pipeline as directed. Utmost care should be taken while carrying out such works to avoid the damage to the existing utilities. If any damage occurs to any of the utility, same will have to be repaired /reinstated by the contractor at his cost immediately and no extra payment will be made to the contractor.
- 4) It is to be ensured by the contractor that all valve chamber covers shall flush with the top of the existing road.
- 5) Due to paucity of space and to ensure better & consistent quality, it is necessary to

provide Ready Mix Concrete (R.M.C) for the concreting works required for the project or as the case may be.

- 6) The warranty period of valves will commence from the physical completion of entire work under the contract.
- 7) The bidder shall note that he will have to arrange for security and safety of Municipal and his own staff working at the site & materials stacked at / near to sites during the whole contract period and the cost of same shall be deemed to have been covered under items of the contract. The bidders/Contractors should note that, no claim whatsoever arising out of the ignorance of site conditions etc submitted later, will be entertained on any account.

10.76 ASSISTANCE FOR THE ENGINEER'S STAFF:

The Contractor shall provide all necessary assistance to the Engineer's Representative and his staff in carrying out their duties of checking, setting out, inspecting and measuring the works. The Contractor shall provide surveyor, staff men, office attendants and labourers, data entry operator, typist and peon as may be needed from time to time by the Engineer at site office as well as BMC office as and when required for any work related to the contract as and when directed by Engineer-in-charge.

The Contractor shall provide for Engineer and his staff protective clothing, safety helmets, rubber boots of suitable sizes, hand lamps, and the likes as may reasonably be required by them. These articles shall remain the property of the Contractor. No separate payment shall be made on this account.

10.77 SAFETY MEASURES AND SERVICES:

The Contractor shall be responsible for the safety of all workmen and other persons entering the works and shall take all measures necessary to ensure their safety to the approval of the Engineer's Representative. The guidelines are as under:

- a. Display of proper safety and emergency regulations; fire, gas and electric shock precautions, provisions of stretchers and first aid boxes together with rescue facilities for each place of working.
- b. Provision of efficient safety helmets for all personnel including the Engineer's Representative and each of his staff and any authorized visitors.
- c. Safe control of water, including provision of ample standby generating and pumping plant;

- d. Provision and maintenance of suitable lighting to provide adequate illumination of works with appropriate spares and standby equipment;
- e. Provision and maintenance of safe, sound mechanical equipment each item of plant having and up-to-date test certificate;
- f. Provision and maintenance of safe, sound ropes, slings, pulleys and other lifting tackle, each appliance having an up-to-date test certificate where appropriate;
- g. Provision of notice board 1.25 m x 1.5 min size, written in bold letter in English, Marathi and Hindi, to be erected on existing footpaths and points of access likely to be used by the public, which shall warn the public.

10.78 IDLE CHARGES:

No idle charges will be entertained on any of the grounds.

10.79 Refund of Contract deposit:-The bidder shall note that for refund of “Contract Deposit”, the maximum “Defect Liability Period” of any part of the work shall be considered.

10.80 Road Safety:- The contractor should appoint a road safety Engineer for the project. The contractor shall also cooperate with the Road safety auditor agency appointed by BMC.

10.81 Penalty for delay not attributed to the contractor: - Deleted.

10.82- Deleted

10.83 BMC have empaneled Road design consultants. The roads considered for improvement in the above bids may be got designed by these consultants if required.

The interested bidders have to inspect all sites & acquaint themselves with the site conditions. BMC has appointed and empaneled the Design Consultants for utility duct design, Pavement design, Urban Planning and road safety design. The successful bidder shall obtain the road design (if necessary), designs of duct, road safety, soak pit etc. before start of work or as directed by Engineer-in-charge from the empaneled consultants. The duct design should be compatible with various utilities such as PNG supplier, Power supply (LT/HT), Telecommunication/optical fiber and any other allied services. It will be binding on the qualifying bidder/agency to obtain the designs at their own cost. The obtained design shall be got approved from Engineer-in-charge. After approval, it will be binding on the qualifying bidder/agency to carry out the work in accordance with the methodology, mode of construction, and design given by

design consultants as stated above and approved by the committee at any stage. BMC will not make any separate payment; contractors shall note the same and quote accordingly.

10.84 Arbitration Clause: -

This office is in receipt of orders of Hon. M.C u/no. MGC/F/8659 DATED 07.09.2019 regarding amendments in arbitration clause of the Standard General Conditions of Contract for Construction Works, 2016. The copies of these orders are uploaded along with this tender.

All bidders are required to note the amendments in arbitration clause of the Standard General Conditions of Contract for Construction Works, 2016 and submit an undertaking that they have noted and agreed to the same.

10.85 Deleted.

10.86 Subletting: -Subletting of work will not be allowed for this tender as per circular n/no.Ch.E./ 248/ SR/ Rds & Tr. Dated 05.08.2019.

10.87 Time Extension: -

Bidders have to submit an Undertaking in Packet 'B' stating that, the work will be completed within stipulated time period mentioned in the tender. In unavoidable circumstances time extension will be granted on merits as per provision of Prevailing SBD provisions.

10.88 Condition related with Road Mapping:

It shall be the sole responsibility of the contractor to carry out the total station survey of all roads included in tender work and to update the road profile in Total Station survey data provided in Auto CAD sheets to roads department. The updated road profile Total Station Survey data shall be provided in auto CAD sheet and SHAPE files, to the Engineer in charge.

10.89 Scanning of Records:

Bidders should note that contractors shall submit scanned copies of updated records, in the form of C.D, Pendrive or any electronic device as directed by Engineer-in-charge along with submission of Final bill.

10.90 Riding Quality:

1) It will be responsibility of the contractor to give the required finish of riding surface by check-ing with the straight edge, and wedge gauge and any deficiency observed, shall be rectified as specified in the general specifications for Road works (for asphalt and C.C. road works.)

Meter straight edge: The measurement and checking of surface evenness can be done by using a 3-meter straight edge during construction & soon after the completion of a short stretch of road work. In case of layers involving bituminous pavement or cement concrete pavement, extra care is needed to rectify the defects before the material cools down/sets. (As per IRC SP:16- 2004)

1) Surface and riding quality of Asphalt and C.C. road shall be maintained and checked as per the below mentioned conditions / norms which are based on the norms and conditions of PWD regarding surface and riding quality of roads.

“Roughness Index: -

The contractor shall be responsible to measure the roughness of asphalt and C.C. road surface for which he may use the Roughness Index testing machine at his own cost. Use of Towed fifth wheel Bump Integrator or laser profilometer or any similar advanced instruments as advised by STAC in recent STAC meeting held on 27.08.2019 shall be made to measure the roughness of the Asphalt and C.C. road surface. The calibration of the machine shall be done from time to time as and when warranted, from reputed instruction like C.R.R.I. New Delhi or any other competent authority and their certificate shall be produced to that effect. The values of roughness so measured shall not exceed the values given below for various types of road surfaces under standard conditions of carrying out the test and as specified below:

i) Bituminous Concrete: 2000mm/km

ii) For C.C. Surface : 2200mm/km

The roughness index test shall be carried out as mentioned below:

1) Roughness index test shall be carried out at each and every completed stretch of road/ entire road work included in the scope of work before opening the same for vehicular traffic or before start of DLP of the work.

2) Further the Roughness Index test will be carried out as under: -

a) It is mandatory to carry out Roughness Index (R.I.) once after completion of the work and thereafter every year from the start of 6th year till the completion of the DLP in case of 10 year DLP.

b) It is mandatory to carry out Roughness Index (R.I.) once after completion of the work and thereafter every year from the start of 3rd year till the completion of the DLP in case of 5 years DLP.

c) It is mandatory to carry out Roughness Index (R.I.) once after completion of the work and thereafter every year from the completion of 1st year DLP till the completion of the DLP in case of 3 years DLP.

The result of Roughness Index test shall be made available to the Engineer-in-charge within 15 days from the test so taken and Engineer-in-charge shall

submit the soft copy of the result of roughness index test to the concerned Executive Engineer roads/ E.E. ward/ as the case may be.

As an outcome of roughness test, where the surface irregularity of wearing surfaces rails outside the tolerances mentioned above, the contractor shall be liable to rectify the deficiencies in a manner as directed and to the satisfaction of executive Engineer-in-charge. The Roughness Index test shall be again carried out after completion of rectification work and the result of roughness index test shall be made available to the Site Engineer-in-charge within 15 days from the test so taken and Site-Engineer-in-charge shall submit the soft copy of the result of roughness index test to the concerned Executive engineer-in-charge/ E.E. ward/ as the case may be.

If contractor fails to carry out roughness index test, the same will be got done at the risk and cost of the contractor (Successful bidder) and penalty of equivalent amount shall also be recovered from the contractor.”

- 3) The amount equal to 10% of the cost of wearing course in case of Asphalt roads works & 2% of the cost of the item R2-RW-10-33: Providing, laying M40 C.C. in case of main carriageway of C.C. road works and 3 % of the cost of the item R2-RW-10-33: Providing, laying M 40 C.C. in case of C.C. side stripes shall be withheld from the contractor's bill towards compliance of condition regarding Roughness index to ensure that surface / riding quality of the road is maintained as per the requisite standards specified in IRC: SP-16-2004 (i.e. 1) R.I. for Bituminous Concrete < 2000mm/km. (2) R.I. for C.C. Surface < 2200mm/km.) This amount shall be refunded to the contractors after completion of D.L.P.
- 4) The rough or scoured surface of Asphalt / C.C. roads as may occur in the defect liability period (DLP), should be resurfaced by the contractor (successful bidder) free of cost. On failure to comply this condition, the work shall be got done at the risk and cost of the contractor (Successful bidder) and penalty of equivalent amount shall also be recovered from any dues payable to the contractors by BMC including retention money of the contract.
- 5) In case of Mastic Asphalt surface, the condition of resurfacing the entire pavement at the end of Defect Liability period shall be applicable only in the event the roughness in clause no.627 of Standard specification for Road Works is not observed within maximum permissible limit i.e.: RI < 2000 mm / km for 'Good' type of surface.

10.91 Safety Norms: The Contractor shall appoint “Road Safety Engineer”. The Contractor shall follow all Road safety norms and shall be responsible for any untoward incident on the road till the concerned Ward Office is informed about completion of the same road.

10.92 DLP Period for refund of Contract deposit and performance guarantee:

In GCC condition 5.f.v, the maximum “Defect Liability Period” of any part of the work shall be considered for refund of “Contract Deposit and Performance Guarantee.”

10.93 Painting and Lane marking: The contractor shall mark date of painting of kerb stone, divider and lane marking at every hundred meters along the road as directed by the Engineer incharge.

10.94 The circular for Accident Compensation issued by Director (ES & P) u/no. Dir/ ES & P / 415 / III dtd 31.12.2019 is applicable to this tender.

10.95 DLP period: The DLP period details shall be as per Annexure-A

10.96 Structural Design: The contractor shall submit the detailed structural design from empanelled structural engineers and same section will be approved after examining as per general practice.

10.97 The Roads proposed for improvement if affected by C.R.Z/Forest land/Environment NOC, may need clearance from C.R.Z/Forest land/Environment authority prior to construction of roads. If applicable, the tenderer/bidder shall appoint the consultant/expert to prepare proposal and submit the same for C.R.Z/Forest land/Environment clearance to M.C.Z.M.A/Forest/M.o.E.F/any other relevant department. All the permissions required, if any, shall be the tenderer’s/bidder’s responsibility and no any extra payment will be made.

10.98 Various relaxations given as per guidelines/directives vide relevant circulars i.e.

- (a) CAF/Project/21 dt. 07.09.2020,
- (b) CA(F)/Project/32 of 26.10.2020,
- (c) CA(F)/Project/36 dt. 07.12.2020,
- (e) CA(F)/Project/41 dt. 09.02.2021,
- (f) CA(F)/Project/42 dt. 09.02.2021

issued by BMC will not be applicable henceforth and SBD conditions shall prevail.

10.99 EMD shall be paid online at the time of bidding and the submission will be insisted as per SBD conditions. Bidder to note that correct ASD needs to be paid as per clause 6.10(B). All other deposits will have to be deposited in the form of Demand Draft (D.D) Only, as per prevailing SBD conditions.

10.100 Contract deposit, ASD and any other deposits, Performance Guarantee (P.G), will neither be accepted in Bank Guarantee (B.G) nor will be released against B.G.

- 10.101** It will be binding on the qualifying bidder/agency to install the latest Hi-definition CCTV cameras every 100 mts, with minimum 100mts clear vision, with continuous feed, with uninterrupted power supply, along each ongoing work sites for surveillance purpose as directed by Engineer-in-Charge. The installed CCTV cameras shall be kept in working condition and continuously linked with BMC offices as directed by Engineer-in-Charge. The Electricity supply and data connection/WiFi connection to the CCTV cameras shall be provided by the contractor at their own cost. BMC will not make any separate payment for the CCTV cameras setup as stated in this clause; contractors shall note the same and quote accordingly. Penalty for non-functional CCTV system or component is Rs. 10,000/- per camera/per day.
- 10.102** The Contractor shall provide minimum two nos of soak pits on each road and at 400mt center to center on longer roads. The provision of soak pit as per this clause or as directed by Engineer-in-charge shall be compulsory. Not providing the soak pit will attract a penalty of Rs. 1,00,000/- per deficient soak pit. For making perforations in RCC NP2 pipe to be used in Soak Pit no separate payment shall be made for the same. Contractor should take into consideration these costs and quote accordingly. The pipe shall be provided as directed by Engineer-in-charge.
- 10.103** The successful bidder shall have to carryout the work of concreting the pavement using mechanical means such as use of Slip Form paver wherever possible or as directed by Engineer-in-charge. The work that will be carried out must confirm to relevant IRC, I.S standards and specifications.
- 10.104** Provision of ducts on each road shall be compulsory as per circular u./no. AMC/P/7909 dtd. 05.01.2022 or as directed by the Engineer-in-charge.

SECTION 11
SPECIFICATIONS
& SELECTION OF
MATERIAL

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SPECIFICATIONS & SELECTION OF MATERIAL

The tender is prepared on the basis of Unified Schedule of Rates 2018 and Technical Specifications for Road works 2013. The specifications of the items of USOR are available on BMC portal <http://portal.mcgm.gov.in> under the Tender tab. Hence the deserving contractor shall either download the same from BMC portal or the same may be collected in the soft copy format at the time of purchasing the tender from this office.

11.1 Concrete Works:

11.1.1 All concrete works shall be carried out by Ready Mix Concrete only. However, in case concrete to be provided on particular day less than 2.5 Cu.M. (Except PQC/RCC work), then RMC will not be insisted.

11.1.2 Material testing including cube and core testing will be allowed in following ratio:

- 1) Min. 50% tests are to be carried out at reputed govt. labs likely IIT/VJTI/SPCE/MSME/National Test House (W.R.)/ Govt. Lab. Min. 25% tests are to be carried out at Municipal testing lab and remaining 25% tests may be permitted at BMC approved private labs.
- 2) The testing at private labs not approved by BMC will be strictly disallowed henceforth. **The testing at BMC's registered private labs will be strictly allowed only on the directions/approval of the concerned Dy.Ch. Engineer (Roads).**
- 3) Testing for compressive strength of all grades of concrete works shall be carried out as per the Quality Assurance Manual or as directed by Engineer In-Charge. 12 cubes (150mm x 150mm x 150 mm) shall be casted and tested for compressive strength for 7-days, 14-days at site laboratory.
- 4) For concrete of grade M 35 or higher used for pavement thickness of 200 mm and above, apart from cubes corresponding three flexural beams (700 mm x 150 mm x 150 mm) for flexural strength of 28 days shall also be cast & tested, for every day's work in the laboratory.
- 5) Besides, once in a month, compressive strength for 7, 14 and 28 days shall be carried out at municipal laboratory or laboratory as directed by engineer in-charge.
- 6) 28-day testing for grades below M-35 of concrete will be compulsorily tested at site lab in presence of AE/ EE.
- 7) In case of failure in compressive strength for 28 days remaining 3 cubes shall be sent for re-testing to other reputed government labs likely IIT / VJTI / SPCE / MSME / National Test House (W.R.)/Govt. Lab / and Municipal registered Lab as directed by Engineer In-Charge.
- 8) 28-day testing for M-35 & above and 7-day testing for early strength M40 & M-60 concrete will be compulsorily tested for days work / each site at Municipal Testing Laboratory.

11.1.3 The temperature of Pavement Quality concrete shall be maintained as per IRC: 15:2002. Concrete having temperature at the time of pouring more than 30°C will not be allowed.

11.2 During night time the contractors shall make necessary arrangement for adequate lighting i.e. in addition to with respect to NOC traffic police for which no extra claims will be entertained.

11.3 FOR CEMENT CONCRETE ROAD WORKS:

1. In addition to the qualities of strength and durability, greater attention will need to be devoted to the qualities of the pavement surface, which directly affect the user perceptions, comfort and safety. In this connection, the wear resistance, surface evenness (riding quality) and skid resistance, as well as freedom of the surface from structural or other quality blemishes (e.g. cracks,

joint and edge spells, surface pitting / pop outs, scaling / potholes, etc.) will need additional attention.

2. The contractor shall have the full responsibility for quality control and also in delivering the requisite quality in the field.

3. The cement and other materials shall be tested at the approved Lab., at contractor's cost, preferably before its use, as per the directions of the site in charge. In case, the test results are not available before its use, the use of the materials shall be permitted on the explicit understanding that they will remove and redo the work at their own cost in case the specimens fail to attain the specified tests.

4. Ordinary Portland Cement of 43 and above grade, Portland Pozzolana Cement or Portland Slag Cement will be allowed to be used for RMC/conventional mix. Contractor shall provide one independent cement godown with capacity of minimum 200 cement bags.

5. The rates proposed in this tender for all concrete and allied works are inclusive of water cost. The contractors shall have to make their own arrangements at their cost for bringing adequate water of potable quality for mixing concrete, curing purposes etc. and for this no extra payment will be made.

6. Water used for mixing and curing of concrete shall be clean and free from injurious amount of oil, salt, acid, vegetable matter and other substances harmful to the concrete. It shall meet the requirement stipulated in I. S. 456. The water brought for concreting and curing etc. shall be got tested from Municipal laboratory (situated at G/North ward office) to verify whether it is suitable for above purposes, whenever directed. This testing will be done at contractor's cost.

7. Contractors will have to apply for water connection and avail one metered water

connection of suitable size at their cost from nearby Municipal water main for drinking purposes. The contractor has to pay the water bill directly to the H.E.'s dept. as per the bill raised by the H.E.'s Department.

8. Sand shall be of approved quality with fineness modulus between 2.4 to 3.5 as per approved mix design. The sand will have to be screened to remove the oversized particles and washed to reduce the silt contents below 5% by volume after one hour and to bring it within the permissible range of fineness modulus. The fine aggregates will be tested as directed by the Engineer.

9. If coarse aggregates are found having white spots, the same shall be got tested from approved testing laboratory to eliminate possibility of potential aggregate-alkali reactivity before accepting or using spotted aggregates.

10. The contractor should make the necessary arrangement to stock the aggregates separately so that they do not get mixed up with each other and / or with the foreign materials and do not get segregated. The screening of the aggregates shall be done if found necessary as directed by the Engineer.

11. M. S. / Tor steel and structural steel required for the work shall conform to the relevant latest Indian Standard Specifications. The steel brought on site shall be got tested at Municipal or any other approved laboratory at the contractor's cost before using on site.

12. To determine the 'K' value, it is necessary to take a plate load test / CBR test within the scope of the work wherever necessary. The test will be taken by A. E. (soil Mech.). However, contractor shall arrange at his cost for excavation, loading and refilling. No payment will be made for this work. For conversion of K - value to CBR value, the value of CBR / K value shall be adopted from IRC: 58-2002, as detailed below:

APPROXIMATE 'K' VALUE CORRESPONDING TO CBR VALUE FOR HOMOGENOUS SOIL SUBGRADES

CBR value (%)	2	3	4	5	7	10	20	50	100
K-Value (Kg/cm ³)	2.08	2.77	3.46	4.16	4.84	5.54	6.92	13.85	22

The recommendations of IRC: 15 – 2002 shall be followed and K-value of less than 5.5 kg/cm³ tested on the sub grade shall not be permitted. In case, a large number of tests are required either in view of low K-value obtained, or in view of heterogeneity/ variability of sub grade, additional field soaked CBR test may be conducted using the above table for assessing the K- value. The final checking will, however, be based on plate bearing test. In case the 'K' value is less than 5.5 kg/cm³ (C.B.R. less than 10.0), **the C.B.R. shall be improved with intermediate GSB sub base as decided by the Executive Engineer.**

13. Testing for the compressive strength shall be carried out for cement concrete works of

Pavement Quality Concrete for each day's work. At least four sets consisting of 3 nos. of cubes (at regular interval) along with 3 flexural beams shall be cast. Cubes from each set shall be tested for 7 days & 14 days at the site laboratory in presence of Asstt. Engr./E.E in charge of work & the contractor shall submit remaining three C. C. cubes for testing compressive strength for 28 days at the Municipal testing Laboratory. Also, the contractor shall cast & submit for each day's work, 3 flexural beams for testing flexural strength at the Municipal testing Laboratory.

14. Whenever the cubes and beams are required to be sent to the laboratory, the same shall be transported to the Laboratory by the contractors at their cost. The acceptance criteria for the test result shall be as per I. S. 456. No payment for this will be made to contractors. The contractors shall arrange to send the cubes and flexural beams to the testing laboratory at least one days before the date of testing of the cubes as well as beams failing which penalty of Rupees 1000/- per day per site will be imposed and recovered from the contractors bill. The charges for testing of cubes and beams at municipal laboratory shall be as per rate schedule fixed for testing by the office of A. E. (Soil Mech.) B.M.C. Lab at Worli from time to time and the same shall be borne by the Contractors.

Quality control in the field shall be exercised on the basis of compressive strength and workability. The maximum water cement ratio shall be 0.40.

15. In case of concrete of less than M 35, at least four sets of cubes shall be cast and tested for 7 days in site lab on the compressive testing machine for day's work. 28 days strength shall be **compulsorily tested at site lab in presence of AE/QMA**. However once in a month the 7 & 28 days testing shall be done in Municipal laboratory.

The three cores shall be taken from single bay for work carried out at quantity up to 300 cum and additional 3 cores thereafter by adopting same frequency of up to 300 cum quantity. The average value of test results of 3 cores shall be considered for deciding the concrete strength for the day's work from which the cores are extracted. The cores shall be extracted preferably from the slabs of the standard size i.e. 45 M x 3.25M (on either longitudinal side of the work). The extraction of core shall be arranged in such a way that three cores are extracted in a day's work of M 35 & above C.C. at regular interval. The average test result of three cores shall decide the core strength of the day's work. If average strength fails, the entire quantity of M 35 & above concrete poured on that day will not be paid. In case the cube test for 28 days period fails, for any particular day's work, additional 3 cores shall be taken from that day's work and will be tested at contractor's cost. If it fails, no payment will be made.

The core dia should be as per relevant IS code with respect to thickness of Pavement.

In case of failure to backfill the pit taken for core testing, a penalty of Rs. 10,000/- per day per core will be imposed on contractor.

16. The density of the compacted concrete shall be such that the total air voids are not

more than 3%. The air voids shall be derived from the difference between the density of core and that of concrete cubes taken for the said day's work. The average value of three cores of at least 100mm diameter shall be considered.

17. All cores taken for density measurements shall also be checked for thickness. In case of doubt, additional cores may be ordered by the Engineer and taken at locations decided by him to check the depth or density of concrete slab without any compensation being paid for the same. Thickness of the slab at any point checked as mentioned above shall have minimum specified thickness as per drawing.

The cost of the Cores & samples to be taken and their testing shall be borne by the contractors. Cores of slab of M: 35 & above C. C. shall be extracted and submitted within a week's period after completion of 28 days in the laboratories approved by the Ch. E. (Rds. & Tr.). On failure of compliance of this conditions a penalty of Rs. 1000 /- per day shall be imposed. However, in the circumstances beyond contractor's control, the matter of waiving penalty will be reviewed by the Ch. E. (Rds. & Tr.).

18. In calculation of the density, allowance shall be made for any steel in cores. Cores shall be reinstated with epoxy mortar or as directed by the Engineer at the contractor's cost. In case the cores are taken from the road already opened to traffic, the mix / material adopted for filling shall be such that it will develop the requisite strength in a minimum period. The holes created by cores shall be so filled that these do not shrink. The core holes shall be reinstated within 24 hours of taking cores, failing which a penalty of **Rs. 10,000 /- per day per core** shall be charged.

19. The Core density test shall be carried out in accordance with relevant I.S. Codes. The results of crushing strength tests on these cores shall not be less than 0.8 times the characteristic cube crushing strength where the height to diameter ratio of the core is two. Where height to diameter ratio is varied then the necessary corrections would be made in calculating the crushing strength of cores in the following manner.

The crushing strengths of cylinders with height to diameter ratio between 1 and 2 may be

corrected to correspond to the standard cylinder of height to diameter ratio of 2 by multiplying with the correction factor obtained from the following equation :-

$$f = 0.11n + 0.78$$

Where f = correction factor and n = heights to diameter ratio

The corrected test results shall be analyzed for conformity with the specification requirements for cube samples. Where the core tests are satisfactory, they shall have precedence for assessing concrete quality over the results of moulded specimens. The diameter of cores shall not be less than 150 mm.

20. If the test results of cores of the concrete are not satisfying the designed strength

requirements, then the payment for the slab/ day's work shall not be made.

21. If the contractors excavate certain portion of the road and fails to concrete the same within the stipulated time limit as per the programme on / or before 31st May of the year, they will be required to reinstate this excavated road portion with bituminous layers as specified and directed by the Engineer. No payment will be made for such restoration.

22. The contractors should also note that they will have to modify, if required, the detailed programme submitted in the form of BAR chart or PERT/CPM, considering the permission obtained from Traffic Police before actual starting of the work at site so as to complete the same in the stipulated contract period.

23. Mix - design to give the target strength as required shall be prepared in accordance with the relevant IRC / IS specifications. The same shall be checked by the Asst. Engineer / Executive Engineer.

24. Minimum Cement content for M 40 Grade of Concrete shall be 350 kg./cum. If this minimum cement content is not sufficient to produce the strength of concrete specified in the drawing/design, it shall be increased as necessary without additional compensation under the contract, or else the fresh mix design shall be carried out till desired results are achieved.

25. The water bound macadam/ W.M.M. base should be adequately watered on the previous day and also two hours before starting lean concreting work so as to keep it in moist condition.

26. Double bulkheads for keeping the dowel bars in the proper alignment shall be provided as per drawing, and as directed by the Engineer. Tie bars should be aligned exactly perpendicular to finished concrete surface of the slab by means of suitable device to be approved by the Engineer.

27. Dowel bars shall be Mild steel rounds in accordance with details / dimensions as indicated in the drawings and free from oil, dirt, loose rust or scale. They shall be straight, free from irregularities and the sliding ends sawn or cropped cleanly with no protrusions outside the normal diameters of the bar. The dowel bars shall be supported on double bulk - head or chairs in prefabricated joint assembly position as approved by the Engineer prior to the construction of the slabs.

Chairs for dowel bars shall be provided as per the drawing and directions of the site in charge.

Separate payment shall be made for the same.

Unless shown otherwise on the drawing, dowel bars shall be positioned at the mid depth of the slab within the tolerance of ± 20 mm spaced equally along intended lines of the joints within tolerance of ± 25 mm. They shall be aligned parallel to the finished surface of the slab, to the centre line of the carriage way and to each other within the

following tolerance.

For the bars supported on bulk - head prior to the laying of the slab.

All the bars in a joint shall be within ± 4.5 mm per 300 mm length of the bar. 2/3rd of the bars shall be within ± 3 mm per 300 mm length of the bar. No bar shall differ in alignment from adjoining bar by more than 3 mm per 300 mm length of the bar in either horizontal or vertical plane.

The Dowel bars shall be covered by a sheath of High-Density Polythene pipes of approved quality for half the length plus 25 mm for expansion joints. The sheath shall be tough, durable and of an average thickness, not less than 1.25 mm. The end portion of the sheath shall be plugged with suitable properly tight cap fitting.

28. All the trenches & loose pockets, excavated pit etc. shall be refilled by metal sand filling or as specified and directed by the Engineer.

29. The laying of M 10 concrete in pavement, will have to be carried out with proper form work only. It shall be ready mix concrete compacted with vibrators and shall have smooth surface. It should have proper cross profile as directed by the Engineer. The surface of M - 10 C. C. shall be maintained smooth till overlaid by slab of M 35 & above C. C. The work will have to be carried out as directed by the Engineer.

Curing shall be done by covering with Hessian cloth and sprinkling with water for 7 days or till the lean concrete is overlaid by M 35 & above C. C. slab, whichever is earlier, but for a minimum period of 24 hours.

30. Ply Waterproof paper or 125 micron plastic membrane shall be used as a separation membrane between concrete pavement slab and the sub base at the same terms and conditions. No extra payment shall be made for plastic membrane.

31. For the desired workability, the ready mix concrete of M 35 & above will have a slump not more than 50 \pm 10 mm.

32. The temperature of Pavement Quality concrete shall be maintained as per IRC:15:2002. Concrete having temperature at the time of pouring more than 30°C shall not be allowed.

33. M 35 & above concrete slab shall be laid in two layers and each layer shall be compacted by needle vibrator, plate vibrator. Screed vibrator shall be used for compaction of 2nd layer in addition to the with needle and plate vibrator.

34. To achieve the proper consolidation of the concrete slab, the top layer of the concrete shall be compacted by needle vibrator, plate vibrator and Screed vibrator. If any depressions are observed on the surface of the concrete, fresh concrete shall be spread on the top, surcharged and got compacted with batten. Screed vibrator is again to be used for compaction as well as levelling. Minimum 3 skilled masons shall be deployed during M 35

& above concreting work.

35. Care shall be taken to prevent the over vibration and appearance of water / laitance on top surface of the slab. If any excess water is noticed on the surface of the slab, the same shall be removed by moving hessian cloth on top surface and the concrete mix shall be immediately rectified as directed.

36. Plate vibrators shall be used for compaction of concrete mix in addition to needle and screed vibrator and as such contractors must have at least two numbers of each machine such as plate vibrator, screed vibrator and at least three needle vibrators in working condition.

37. The distance as well as time lag between bottom concrete layers and top layers during concreting operation shall not exceed 2.5 meters, or 20 minutes whichever is less.

38. Whenever the needle vibrator is used, the mason must follow with a trowel and punch to the portions of concrete from where the needle vibrator is withdrawn to ensure that no hollow portion remains in the stiff mass of concrete. Plate vibrating shall also follow thereafter immediately.

39. Concrete pavement must be in proper cross profile as per camber prescribed by the Engineer.

40. After the final regulation of the surface of the slab, surface of concrete slab shall be brush -textured in a direction at right angles to the longitudinal axis of the carriageway.

41. The brushed surface texture shall be applied evenly across the slab in one direction by the use of a wire brush not less than 450 mm. wide. The brush shall be made of 32-gauge tape wires grouped together in tufts spaced at 10 mm. centres. The tufts shall contain an average of 14 wires and initially be 75 mm. long. The brush shall have three rows of tufts. The rows shall be 20 mm. apart and the tufts in one row shall be opposite the centre of the gap between tufts in the other row. The brush shall be replaced when the shortest tuft wears down to 60 mm. long.

42. The texture depth shall be determined by the sand patch test as described in the clause given below. The test shall be taken at least once in a week or whenever the Engineer considers it necessary, at times after constructions. 10 individual measurements of the texture depth shall be taken at least 2 Mtr. apart anywhere along the diagonal line across a lane width between points 50 M apart. No measurements shall be taken within 30 mm of the longitudinal edges of the concrete slabs. The texture depth shall not be less than minimum required as per the table below, nor greater than a maximum average of 1.25 mm.

Time test	Number of measurements	Required texture depth	
		Specified value	Tolerance

Not later than 6 weeks or before the road is opened to public traffic	An average of 5 measurements	1.00	+0.25 -0.35
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43. After the application of the brushed texture, the surface of the slab shall have a uniform appearance.

44. Where the texture depth requirements are found to be deficient, the Contractor shall make good the texture across the full lane width over length as directed by the Engineer, by retexturing the hardened concrete surface in an approved manner.

45. It will be the responsibility of the contractor to give the required finish of riding surface by checking with the straight edge and wedge gauge and any deficiency observed, shall be rectified as specified in the Technical Specification for Road Works-2013.

Meter straight edge: The measurement and checking of surface evenness can be done by using a 3-metre straight edge during construction & soon after the completion of a short stretch of road work. In case of layers involving bituminous pavements or cement concrete pavements, extra care is needed to rectify the defects before the material cools down/sets. (As per IRC SP:16-2004) as per circular u/no.Ch.E./248/SR/Rds&Tr dated 05.08.2019

46. Initial curing shall be done immediately after the surface texturing.

Initial curing shall be done covering with hessian cloth and sprinkling with water over the concreted portion as soon as the concrete starts setting and by the application of approved resin based aluminized reflective curing compound which hardens into an impervious film of membrane with the help of mechanical sprayer. Care should be taken not to disturb the brushed surface texture.

Further curing of concrete shall be done as directed, for a minimum period of 14 days from the date of casting of c.c. slab.

A penalty of Rs.1,000/- per Sq.M. per day will be levied for broken vats. A penalty of Rs.10,000/- per day will be levied for improper curing.

47. The vertical sides of concrete slab are required to be tarred with hot/cut-back bitumen of 80/100 grade before casting of the adjoining relevant bay. The channels should be erected perfectly in vertical position. The gaps between two channels shall be properly covered by water-proof papers and the gaps at the bottom shall be properly sealed in C.M. for which no extra payment will be made.

48. The contractors shall have to cast runner beams, man hole bay, water tables, water entrance bays etc. preferably within 5 days from the date of casting slab failing which a penalty of Rs.5000/- per day shall be levied on contractors

49. The cement concrete slab pavement in M 35 & above is required to be carried out

strictly as per the drawing. As regards thickness no claims on account of additional thickness other than the specified, if provided, will be entertained.

50. The flexible pavement shall be improved in asphalt mix, paver blocks or by other methods as directed by the Engineer, before allowing the traffic on adjoining completed C.C. slabs. In case it is not possible, a specific sanction of Dy. Ch.E. (Roads) should be obtained before allowing traffic on C.C. slabs.

51. The joints shall be cut within the time as per item description to a depth of 100mm or min.1/3th depth of C. C. bay, as directed, failing which these will be got done at contractor's cost and penalty will be levied as directed by Engineer including withholding the payment of adjoining panels of the uncut joints for 5 years. A suitable rebate for less depth i.e. in between 75 mm to 115 mm will be taken on prorata basis. A proper record shall be maintained in the register.

52. The machine cut joints should be filled in immediately with thermo Cole as directed by the Engineer till regular dressing of joints is done. Separate payment will be made for this work.

53. The machine cut joints and expansion joints must be cleaned first by using Raking tool and then air blown with compressor, so as to remove dust, sand particles and foreign matter from

the joints before filling them with hot sealing compound as specified in IS 1834-1984, after applying primer conforming to IS 3384-1986.

The details of sealing compound and bituminous primer to be followed as per Annexure I.

54. No separate payment for restoring vattas i.e. before and after cutting of joints or damaged on any account shall be made. Such vattas shall be restored immediately by the contractors. After curing period is over, the vattas shall be removed thoroughly, without keeping behind any vatta impression and without damaging the surface texture of the slab.

55. The contractors shall observe compliance of following requirement in respect of works of sealing of joint.

55.1 The contractors shall have to purchase the joint sealing compound from open market and from reputed manufacturers, a list of which is available in the office of respective Dy. Ch. Engr.(Rds). The sealing compound shall conform to Grade 'A' of IS 1834-1984 i.e. 'Specifications for hot applied sealing compounds in Concrete'. The Sealing compound shall have to be got tested at Municipal Laboratory or at the V.J.T.I., I.I.T. or S.P. college Laboratory or at the laboratories approved by Ch.Engr.(Rds. & Tr.) at contractor's cost before its use for every batch in addition to manufacturers' test results of sample.

55.2 The Delivery challans for joint sealing compound shall bear requisite details, such as Sr. No., Batch No., Date, Weight and name of the contractor to whom the sealing

compound is being supplied etc. The manufacturer's Test Certificate to the effect that sealing compound conforms to relevant I.S. specifications shall invariably accompany every consignment of sealing compound, brought on the site.

55.3 Due care shall be taken to see that temperature is carefully controlled while heating the joint sealing compound. Due precautions shall be taken to avoid over-heating of joint sealing compound above 180 degree Celsius as well as heating for long periods since sealing compound will lose its properties due to overheating. In case of default on this account, entire overheated material will be rejected. Therefore, quantity of sealing compound required for one operation of joint sealing work shall be heated.

55.4 Joint sealing compound once heated but not utilized will not be permitted for use after reheating the same and such material will be discarded and will have to be removed from site.

Indian Standards (IS & IRC) for work of sealing of joints and quality control:-

- i) IRC 15-2017 Standard Specifications & Code of Practice for constn. of Concrete Roads.
- ii) IRC 57-2006 Recommended practice for sealing of joints in Concrete Pavements.
- iii) IS 1834-1984 Specifications for hot applied Sealing Compounds in Concrete.
- iv) IS 3384-1986 Specifications of primer.

55.5 The joints cut and cleaned shall be got certified from the Engineer before filling with sealing compound as per the specification for sealing of joints in rigid pavements. The spilled over sealing compound if any shall be removed immediately.

56. The regularity of the surface of the slab shall comply with the requirement of following clause.

56.1 Compliance with the requirements of this clause for surface regularity shall be measured using an approved 3 m long straight edge and wedge in such a way as to reveal any and all irregularities. The maximum permitted number of surface irregularity of 5 mm and 7 mm in a length of 300 m shall be 20 numbers and such irregularities shall be properly recorded in the register.

56.2 Longitudinal irregularity shall normally be measured along any line or lines parallel to the edge of the slab.

56.3 Transverse irregularity shall normally be measured along any line with the straight edge placed at right angles to the centre line of the road.

57. If deemed necessary by the Engineer, any section of the slab which deviates from the

specified levels and tolerance shall be demolished and reconstructed at the Contractor's expense.

58. There shall be a defect liability for as mentioned in Annexure 'A' for C.C. pavement. If during the **defect liability period or during construction period**, concrete road fails due to (1) development of cracks (2) Spalling of edges (3) Erosion of concrete surface etc., the action as decided by the engineer shall be taken against the C/s. **In case of development of structural/full depth cracks, the respective C.C Panel(s) will compulsorily be reconstructed by the contractor at his own risk and cost and penalty equivalent to the cost of reconstruction of panel as per USoR in force at time of reconstruction will also be recovered in addition to reconstruction of the panel(s). This condition will be applicable during execution stage as well as during DLP.** However, for cracks in M.H. bays, entire cost of M.H. bays shall be recovered. If the contractors replace the cracked panels within time and within the guarantee period, the said amount shall be paid separately. It is obligatory on the part of contractors to take care of such cracks during the guarantee period. During the defect liability period, dressing of joints complete in all respect shall have to be done free of cost at least once in a year preferably in the month of April or May as directed by the engineer under municipal supervision. If the contractor fails to comply with the above conditions, the note of the same will be taken while evaluating the tenders for C.C. road works in future.

In case of disputed cracks, nature of cracks may be ascertained by extracting core on the crack in question by the contractor at his cost. If the depth of the penetration of the crack observed on the core is more than 1/3rd the depth of the slab, the crack will be considered as structural crack.. Reinstatement of the core holes shall be as per in the relevant tender condition.

59. The contractor when called upon will take up the additional work and complete the same at their rates, terms & conditions of the contract without claiming any compensation and work shall be completed within the time period allotted to this contract. All taxes/duties etc. will be borne by the contractors and not by the BMC.

60. If any contractor fails to carry out work, the same will be got executed at his risk and cost, through other agencies.

61. The works shall be carried out at least at 3 to 4 places even at more sites as directed by Engineer in charge, in each ward at a time simultaneously if necessary, so as to complete the work in stipulated time.

62. Ready mix concrete will be brought to the site from RMC plant only by transit mixers.

a) Every transit mixer will carry delivery challan, mentioning the minimum following details

i) Name of Manufacturer and Depot.

- ii) Serial No. of challan.
- iii) Date
- iv) Truck No.
- v) Name of contractor to whom the RMC is being supplied.
- vi) Location of contract work.
- vii) Grade of concrete.
- viii) Specified workability.
- ix) Cement content and Grade of cement.
- x) Time of loading

Quantity of concrete.

b) A computerized print out showing details of ingredients or ready mix concrete including ad-mixture viz. the actual weight of each ingredients, required weight of each ingredients as per mix design etc. shall invariably be obtained with each transit mixer carrying RMC on site. The computerized sheet shall be signed by the site in charge and contractor's representative and shall be preserved as a record on the site. The batch report sheet of the Concrete material shall be submitted with challans daily.

63. The Pavement Quality Concrete should be produced in RMC plant using ice flakes to control the temperature of concrete and no extra payment will be made for the use of ice flakes in concrete. The Pavement Temperature of Pavement Quality Concrete should not exceed 30°C at the time of pouring.

64. When the truck arrives on site, the drum should always be speeded to about 10 to 15 rev/min, for at least 3 minutes, to make sure that the concrete is thoroughly mixed and uniform, before discharge.

65. Testing of Ready Mixed Concrete:- The sampling and testing requirements for ready mixed concrete are the same as those for site mixed concrete. As regards testing of workability, following procedure be followed. After making sure that the concrete has been uniformly mixed, take a sample from the first 0.5 cu.m. of concrete discharge, and do a slump (or compacting factor) test on the sample. If the result complies with the specified requirements, then the load should be accepted. If the results are beyond limits, a further sample should be taken from the second 0.5 cu.m. of the discharge, and if this is satisfactory, the load should be accepted, if not, the concrete load shall be rejected, as the same is not as per the specification range. The specified slump is 50 mm while carrying out above tests, it may vary by 10 mm.

66. No extra payment will be made for the use of admixtures.

67. The main contractors will be responsible throughout the defect liability period as mentioned in Annexure- 'A' of this tender.

68. It will be the sole right of the Administration to allow or disallow the use of ready mixed concrete in specific works based on the site situation, number of works, distance of plant from

the site of work, etc.

69. Diamond cutter shall be used for CC Cutting as and when directed by Engineer in-charge. No separate payment will be made for the same.

70. LIST OF EQUIPMENT REQUIRED TO BE PROVIDED BY THE CONTRACTORS FOR CEMENT CONCRETE ROAD WORKS IN EACH SITE OFFICE OF RESPECTIVE WARDS.

1. Screed vibrator – Min. two Nos.
- 2.a) Min. two needle vibrators (60 mm) &
b) Min. Two needle vibrators (40 mm)
3. Min. Two plate vibrators for compaction of concrete & two vibratory plate compactors for compaction of trenches, paver blocks etc..
4. At least two water tanks of 10000 Ltrs. Capacity each.
5. 3 steel battens of channel section of 4” width with proper handles at both the ends.
6. 2 straight edges with scaled wedge.
7. Requisite finishing instrument.
8. One joint cutting machine for cutting minimum 100mm depth with two spare blades.
9. M.S. channels minimum 200 R.M. in length in proper shape, line and level.
10. 4 set of double bulk-heads as per drawing.
11. 3 steel fabricated farms for raising manholes.
12. Portable air compressor.
13. 2 templates for checking camber

14. 20 cube moulds, 150 mm x 150 mm x 150 mm
15. 1 slump cone with two additional measuring rods.
16. Diamond Cutter.
17. Two joints raking tools.
18. 6 flexural beam moulds of size 700 mm x 150 mm x 150 mm
19. 15 mm internal dia M.S. pipes for straightening the tie bars.
- 20 Two nos. Steel wire brooms as specified.
21. Min. two sprinklers.
22. Levelling instruments.
23. Two farmas.
24. a) Measuring tape, b) Steel tape
25. Generator Set – Min. One no.
26. Digital Thermometer – Two Nos.
27. Wooden Platform – Two Nos.

Contractor must procure all the aforesaid equipment and machinery before commencement of the respective work in good working condition.

71.Details of Contraction joints:- Transverse contraction joints should be spaced at every 4.0 m.intervals. The saw cut contraction joints should be 90 mm deep. The contraction joints should be sealed with hot poured rubberized asphalt. A backer rod should be provided at the bottom of the sealant reservoir for ensuring proper shape factor and to prevent the sealant from bondingto the bottom of the joint reservoir. Use of closed-cell polyurethane Foam rod is recommendedas backer rod. The diameter of backer rod should be approximately 25 percent greater than thewidth of the joint to ensure a tight fit. The dimensions recommended for the sealant width (W), depth (D) and recess (R) are

respectively 10-12 mm, 8-10 mm, and 6 mm.

*Note: Capping layer is needed if CBR of natural subgrade is less than 5%, material should have CBR of 8% with PI less than 8% Capping layer/GSB layer should be varied to match the finished level of PQC No expansion joints excepting at where the pavement abuts culverts or bridges.

11.4 FOR ASPHALT ROAD WORKS :

1. Loads of asphalt mix brought on dumpers shall be fully covered with tarpaulin, failing which Rs.5000/- for every dumper load received on the site uncovered with tarpaulin will be imposed as penalty and it will be recovered from the contractor's bill.
2. The dumper loads of the asphalt mix shall be checked at random at public weigh Bridge including the Tar Weight for verifying the correct weight of the mix at the rate of one load out of every ten loads.
3. Various asphalt mix challans shall bear printed serial No. weight and departure time from the plant end. The test reports of the test conducted in the asphalt plant laboratory shall invariably be accompanied with the first load. The batch report sheet of the Asphalt material shall be submitted with challans daily.
4. While laying asphalt mix layers on the existing road surface, care shall be taken to ensure that no manhole or chamber covers of drainage, etc. are buried or kept higher than road surface. They shall be first identified and raised or lowered to be flush with final asphalt surface.
5. Prime coat/Tack coat will be allowed during execution of resurfacing work only by mechanical sprayer. Prime coat should be of RS-1 type & brought from reputed manufacturer like HINCOL etc.
6. After laying of the surface course in AC/BC, lime powder should be evenly sprayed on the surface and the rolling be carried out for smooth finish.
7. The contractors shall bring the correct size of metal/material required for construction of water bound layers. The contractors will not be allowed to break stones, preparation of material for water bound layers on site.
8. If required contractors should carry out, any minor works such as raising / lowering of manhole, attending to bad spots, bad patches etc. As may be decided by the Engineer-in-charge under contract at the rates included in the Bill of Quantities of the above work with his percentage quoted.
9. In case of milling if the material is found suitable then such material to the tune of 30% be used on site.
10. Field Density test shall be taken in Asphalt Concrete Carpet, W.M.M. and GSB.
11. The equivalent paving Bitumen grade for 30-40 grade bitumen is VG 40 as per IS-73:2013 (maximum penetration 35 mm).
12. Surface finish on Mastic to ensure skid Resistance-- The mastic asphalt surface can

have poor skid resistance after floating; in order to provide resistance to skidding, the mastic

asphalt after spreading, while still hot and in a plastic condition, shall be covered with a layer of stone aggregate. This aggregate shall 9.5mm size (passing the 13.2 mm sieve and retained on the 6.7 mm sieve) subject to the approval of the Engineer. Hard stone chips, complying with the quality requirements of Table 300.44, shall be pre-coated with bitumen at the rate of $2 \pm 0.4\%$ of S-65 penetration grade after adding 2% of filler complying with the requirements in Table 300.28 to enable this quantity of binder to be held without draining. The chips shall then be applied at the rate of 10 kg per sq. m. and rolled into the surface of the mastic layer when the temperature of the mastic asphalt is between 80 and 100 deg Celcius.

11.5 TESTING OF MATERIAL -

Contractors are required to send at least one sample per day up to 50 M.T. and at the rate of one sample for every additional 50 M.T or part thereof per day for Asphalt Macadam/ Seal Coat/Asphalt Concrete and other asphalt mixes to the laboratory for testing. The contractor shall note that, 50% payment of the bitumen work will be withheld till the results are received.

The test of samples of asphalt macadam, asphaltic concrete, mastic asphalt, used in the work shall be carried out at municipal laboratory or approved laboratory as directed by engineer in-charge.

The site laboratory shall be used for testing of sub-base, GSB, base course, WBM, concrete cubes (7 days, 14 days) and other materials as necessary and directed engineer in-charge.

11.5A All tests mentioned in this bid document shall be carried as under-

Material Testing will be allowed in following ratio -

(a) Material testing including cube and core testing will be allowed in following ratio:-

- (i) Min. 50% tests are to be carried out at reputed govt. labs likely IIT/VJTI/SPCE/MSME/National Test House (W.R.)/ Govt. Lab. and
- (ii) Min. 25% tests are to be carried out at Municipal testing lab.
- (iii) and remaining 25% tests may be permitted at BMC approved private labs.**

The testing at private labs not approved by BMC will be strictly disallowed henceforth.

The testing at BMC's registered private labs will be strictly allowed only on the directions/approval of the concerned Dy.Ch. Engineer (Roads).

(b) Testing of all materials used on site, as per testing frequency specified in relevant specifications, standards, Quality assurance manual etc is compulsory. If adequate no. of tests are not carried out the corresponding pro-rata quantity payment will be withheld/recovered if inadvertently paid, at any stage of the contract.

(c) The charges for testing of construction materials and asphalt mixes shall be as per the rates in force at the time of testing of materials/asphalt mixes and the testing charges shall be borne by the contractor.

(d) All requests for testing of samples must be made in writing to in duplicate specifying there in the following information (separate memo should be sent for concrete, steel, soil, asphaltic mixes) etc.

(i) Name of the Work, Work Code No. if any

(ii) Type of material and tests desired (i.e. grade of cement, date of consignment)

(iii) Identification mark on the sample should be mentioned on the forwarding memo (in case of concrete beams and cubes identification marks, grade of concrete, date of casting, specimen No. should be engraved on concrete. If these details are marked by paint, samples will not be accepted. In case of reinforcement bars, details shall be displayed on label pasted on bars and label must be signed by the officer who has taken the samples.)

(iv) Name and full postal address of the officer to whom the results must be sent.

(v) Date of sampling (i.e. date of laying asphalt mix, Sr.No. of load casting concrete or taking cement samples.)

(vi) Name of the tenderer carrying out the work.

(vii) Any other information, which is specified by the user department.

(e) Samples must also bear the identification mark and signature of site in charge/ officer taking the samples. In case of samples of asphalt mixes sent in polythene bags a legible duplicate tag should be stapled from outside.

(i) Quantity of sample for testing must be adequate as shown in the schedule.

(ii) For issuing additional copies or duplicate copies of test results at Municipal Testing Lab. Rs.36/- or the rates enforced at the time of executions will be charged for each copy. Request for additional /duplicate copy should be made in writing by site in charge or higher officers of the user department.

(f) Field Density test shall be taken in Asphalt concrete Carpet for any thickness. The Contractor shall obtain the intimation letter from or concessionaire & furnish the same to A. E. (Soil Mech.) or as directed by the Engineer within 7 days from the date of laying of asphalt concrete for carrying out the field density test. For any neglect or delay on the part of the contractor to intimate the same within seven days period, the additional charges as penalty would be recovered from the Contractor up to Rs.200/- per test per week at the time of submission of intimation to A. E. (Soil Mech.)'s office.

(g) Samples of bitumen cut back, emulsions shall be forwarded in wide mouthed metal containers with label pasted on the lid.

vi) Samples for tensile testing of reinforcing bars shall be straight for entire length

without bends. The ends of the bars shall be hacksaw cut and not chisel cut. One sample of each diameter bar shall be sent for first test and for retest, two bars shall be sent. The length of the bars shall be 50 cm. For all diameters.

- vii) Samples that are sent for testing for natural moisture content, shall be forwarded in waxcoated packing or sealed airtight bags.
- viii) Undisturbed samples sent in sampling tube shall be wax coated on both open ends.
- ix) The samples thus taken shall be sent to the Testing Laboratory within 4 days from the date of laying, of Asphalt mix on site. In case of delay, additional testing charges as penalty would be recovered from the Contractor at the following rates.

A)	From the 5 th day to 7 th day from date of laying of asphalt mix on site	Rs. 10,000/-
B)	From the 8 th day to 14 th day from date of laying of asphalt mix on site	Rs. 20,000/-

The above charges i.e. (A) & (B) shall be paid by the contractors at time of submitting the samples in Municipal Laboratory.

If the samples of the Asphalt mixes are not sent for testing within 14 days, payment for the corresponding quantity of those samples shall not be made.

Charges would be recovered from the respective bills payable to the contractor by respective department and credited to XV- Traffic Operations, Roads and Bridges, H – Material Testing Laboratory.

Material Testing Laboratory

- a) A penalty of Rs. 5000/- for each gradation failure as per result of GSB, WMM, joint filling sand, bedding sand and sand metal will be imposed.
- b) In case of failure of asphalt mix sample testing in Municipal Laboratory in various tests the following penalties will be imposed.
- c) Rs.5000/- for each gradation failure as per result of asphalt macadam, seal coat and asphaltic concrete and Rs.5,000/- for each gradation failure in mastic asphalt.
- d) For failure on more than 3 gradations in any asphalt mix. 50% of the cost of the work represented by the failed sample will not be paid to the contractors.
- e) Rs.5,000/- each for failure in flow value/Bulk density/Void ratio/marshall

stability in a asphaltic mix beyond permissible limit as mentioned in the test report.

- f) In case of less% (percentage) of bitumen in the bitumen mix beyond specified limit, the area represented i.e. work carried out related to sample has to be removed and redone.
- g) In case of excess % (percentage) of bitumen in the bitumen mix, than the specified limit, 50% of the cost of day's work represented by the sample will be recovered as penalty.
- h) In case of failure of field density of Asphalt mix, the area represented by the sample has to be removed and redone.

The test of samples of asphalt macadam, asphalt concrete, mastic asphalt, paver blocks, concrete cubes (28 days) flexural beams used in the work shall be carried out at municipal laboratory or approved laboratory as directed by engineer in-charge.

The site laboratory shall be used for testing of sub-base, GSB, base course, WBM, concrete cubes and other materials as necessary and directed engineer in-charge.

The charges for testing of construction materials and asphalt mixes shall be as per the rates in force at the time of testing of materials/asphalt mixes and the testing charges shall be borne by the contractor.

- x) Cement samples should be forwarded in sealed airtight container with one opening on top not less than 10 cm. in diameter.
- xi) Molds of concrete cubes/beams taken on hire shall be returned in clean, oiled condition with all nuts and accessories in proper position.
- xii) All the specifications laid down by IRC and as detailed in the relevant clauses of MORTH- (2013 as amended) Manual on Specifications for Road and Bridge Works in respect of Construction of Drainage Layer, Wet Mix Macadam, Dry Lean Concrete should be strictly followed.
- xiv) All the works for thin/ ultra-thin white topping shall be carried out as per IRC – SP

– 76 & as per detail specifications at 11.12

11.6 Paver Blocks –

All paver blocks shall be sound and free of cracks or other visual defects which will interfere with the proper paving of the unit or impair the strength or performance of the pavement constructed with the paver blocks.

The test criteria and material requirements for Paver blocks should adhere to IS-15658: 2006. The salient features are as given below –

Physical Requirements –

- a) All paver blocks shall be sound and free of cracks or other visual defects which will

interferewith the proper paving of the unit or impair the strength or performance of the pavement con-structed with the paver blocks.

b) When two layer paver blocks are manufactured there shall be proper bonding between the layers. De lamination between the layers shall not be permitted. The compressive strength of the two layer blocks shall meet the specified requirements.

c) When paver blocks with false joints, surface relief or projections are supplied, the same shall be specified. Also, the surface features shall be well formed and be devoid of any defects.

d) The mix design for paver blocks shall be obtained from manufacturers and shall be sub- mitted before commencement of the work.

e) In case of failure of samples, the corresponding area of paver blocks shall be removed &replaced and samples of replaced lot shall be tested.

Thickness of Wearing Layer -

When paver blocks are manufactured in two layers, the wearing layer shall have minimum thick-ness as specified in the IS. The thickness of the wearing layer shall be measured at several pointsalong the periphery of the paver blocks. The arithmetic mean of the lowest two values shall bethe minimum thickness of the wearing layer.

Water Absorption -

The water absorption, being the average of three units, when determined in the manner de- scribed in the IS15658: 2006, shall not be more than 6 percent by mass and in individual samples,the water absorption should be restricted to 7 percent.

<u>Tensile Splitting Strength</u>				
<u>Test</u>				
Sr. No.	Thickness of Paver blocks	Grade of concrete	Minimum Tensile Splitting strength in Mpa	
			Individual	Averag e
i	50	30	≥ 2.1	≥ 2.2
ii	60	35	≥ 3.1	≥ 3.4

iii	80	50	≥ 4.1	≥ 4.5
iv	100	50	≥ 4.1	≥ 4.5
v	120	55	≥ 4.6	≥ 5.2

Abrasion Test –

Abrasion resistance for classes of H & I mark Paver blocks is $\leq 20,000 \text{ mm}^3 / 5000 \text{ mm}^2$ (Individual) and $< 18000 \text{ mm}^3 / 5000 \text{ mm}^2$ (Average), respectively.

The required number of test for abrasion resistance shall be 1 test for a quantity of 2,00,000 paver blocks.

Sampling

The required number of blocks shall be sampled from each batch of the consignment of blocks up to a quantity of 25,000 blocks.

Sr. No.	Property	Number of Paver Blocks for Test
i)	Water absorption	3
ii)	Compressive strength	8
iii)	Tensile splitting strength	8

Compressive Strength –

Compressive Strength of paver blocks shall be determined as per the method given in the IS. Paver block strength shall be specified in terms of 28 days compressive strength. In case the compressive strength of paver blocks is determined for ages other than 28 days, the actual age

of testing shall be reported. The average 28 days compressive strength of paver blocks shall meet the specified requirement. Individual paver blocks strength shall not be less than 85 per- cent of the specified strength. In case blocks of age less than 28 days are permitted to be supplied, correlation between 28 days strength and the strength at specified age for identified batch/mix of blocks shall be established.

The specified average 28 days compressive strengths of different grades of paver blocks are given in the table below:

Compressive Strength Requirements of Concrete Paver Blocks.

Sr. No	Grade of Paver Blocks Compressive Strength N/ mm ²	Minimum Average 28 days
i)	M-30	fck + 0.825 x established standard deviation (rounded off to nearest 0.5 N/mm ²)
ii)	M-35	
iii)	M-40	
iv)	M-50	
v)	M-55	

11.7 Maintenance Works –

1. During the Contract period (including intervening monsoon) the contractor shall maintain the roads under project work in proper motorable and traffic worthy condition at his own cost. The contractor shall attend and repair the damaged portion of the roads under project work and the said work shall be done within **24** hours from intimation as directed by Engineer. The contractor shall not be entitled for any additional cost for such work undertaken.

2. a) The defect liability period for the improved roads shall be as per Annexure 'A'. The contractor shall be liable to maintain the roads under project work during the defect liability period, which shall include any repairs, rectification of any part or portion of the roads under project work immediately without waiting for any notice or intimation and shall include:

1. Maintaining roads signs, road markings, arrow marking etc. Throughout the year.
2. Maintaining the kerbs, dividers, jointing etc. With proper painting thrice in year preferably in October, January & April as per M.C.'s orders under no. MGC/A/6558 dated 17.12.2013, jointing etc. The contractor shall mark date of painting of kerb stone, divider and lane marking at every hundred meter along the road as directed by the Engineer in charge, as per circular u/no.Dy.Ch.E./10461/Traffic dated 08.01.2019.
3. All road side furniture shall be inspected, restored/painted to original condition.

4. Surface deteriorations shall be rectified.
 5. Paver blocks- the undulations in the paver blocks, settlement of paver blocks, brokenpieces of paver blocks shall be rectified /replaced as directed.
 6. The contractors shall not allow any trenches on the roads under project work without due permission from concerned authority of BMC.
 7. Cleaning and maintaining of laterals and water entrances of storm water drains including replacing missing/broken covers on improved roads till completion of project.
 8. The contractor shall not be entitled for any additional cost for such works undertaken.
3. Prescribed period for completing the maintenance works shall be as under:
- a) Deteriorated surfaces in Asphalt, Paver Blocks that affect the movement of traffic shall berepaired /rectified within 24 hrs. of notice of such defects by the contractor or when the default is brought to his notice by concerned staff of B.M.C.
 - b) All other maintenance work like Road signs, Lane marking, railing etc. If found defective,shall be started within 7 days of notice of such defects by the contractors and completed within a reasonable period of 4 weeks or period as directed by Engineer whichever is earlier.
 - c) Filling of potholes or patching up should be taken and completed within 24hrs of issue ofinstructions to do so.

11.8 Reinstatement of Trenches-

During the Contract period, various agencies including Municipal utilities may be permitted to take trenches. The contractors shall reinstate such trenches as per specifications/ guidelines and restore such portion with original surface treatment as directed. The payment for these items will be as per (2) below. The contractor shall co-ordinate with the Ward Office /trenching utilityetc. To start the reinstatement of the trench after receipt of such intimation from A.C. of concerned ward and complete the same as directed. If any unauthorized trenches are taken in the project road stretch, it shall be the responsibility of the contractor to restore the same to original condition as directed. For which no extra payment towards reinstating such unauthorized trenches shall be made.

The contractors will have to reinstate the trenches excavated on Project Roads during the contract period, as per specifications and guidelines as prescribed in policy guidelines issued under No. MGC/F/1835 dated 17.11.2007, reinstatement of Trenches policy guideline issued u/no- AMC/ES/9923/II Dtd.20.07.2015 is applicable with amendments thereof up-to-date and as cited in the tender OR as per latest circulars issued in this regard. Booklet containing guidelines & circulars is available in respective offices of Dy.Ch.Eng. (Roads) (Planning) and may be purchased from Municipal Head Office.

1. The contractors shall be mobilized with sufficient men powers & machinery etc. For taking up work of this nature at short notice at multiple places on project Roads as required/ directed by Engineer in charge.

The reinstatement of trenches during defect liability period shall be done by contractor or agency concern. The defect liability period of the reinstatement work will be as per Annexure 'A' or balance DLP of the work whichever is later. The reinstatement of trenches carried out on improved roads during defects liability period will be paid as per rates prevailing at the time of execution with quoted percentage of this tender.

The 80% amount of the payment will be made after satisfactory reinstatement of the trench and balance 20% will be released proportionately during Defect Liability Period of the said trench.

11.9 It will be the responsibility of the contractors to arrange for a joint inspection in every quarter of the year after completion of the work till the expiry of defect liability period and also 4 weeks before expiry of the defect liability period. Further, if the contractor fails to do so, the observations made by the staff during site inspection will be considered for the purpose of noting the defects and rectification of such defects shall be carried out by the contractor failing compliance, the same will be carried out at risk and cost through other contractor/agency along with penalty equal to award of expenditure incurred for rectification work.

11.10 The contractor shall maintain soft copy of the following registers as applicable during execution of work :-

<u>List of Registers</u>	
Register Code	Name of Register
1.	Inventory Register
2.	Daily Progress Register
3.	Instruction Register
4.	Level Book
5.	Mix design file
6.	MTL Result file

<u>List of Registers</u>	
Register Code	Name of Register
7.	Photograph album
8.	Excavation Register (Asphalt, rock, soil etc)
9.	G.S.B. Register
10.	W.M.M. Register
11.	D.L.C. Register
12.	Duct Pipe /Lateral Register
13.	Steel Register
14.	Form Work Shuttering Register
15.	Pour Card Register
16.	Various RMC (M10, M15.....M60 etc.) register
17.	M 10, M15, M20, M25, M35/M40 Cube registers
18.	R.M.C. Challan file
19.	Asphalt Mixes (BC, BCWP, DBM, BM, SC etc) Register
20.	Bituminous material challan file
21.	Penalty Register.
22.	RFI file
23.	Miscellaneous Register for maintaining of records for which payment is made.

Any other registers required as per description of items for any activity/material/quantity for which payment is made or as instructed by engineer in-charge. Hard copies of the registers signed by the contractors shall be provided as required.

The contractor shall depute his staff for joint measurement of site whenever called upon by site staff (Sub Engineers). In case of failure to do so, the measurements recorded by site staff (Sub Engineers) shall be considered final and payment to the contractor will be made accordingly.

11.10.1 : Request Form for Inspection (RFI)

The contractor shall raise RFI in duplicate at each hold point (at each defined stage of construction activity) to QMA site engineer and QMA site engineer will have to

verify/cross check and ensure that the work is carried out as per design & specification along necessary certified levels sheet & all relevant test results certified by quality control engineer of both QMA & contractor. Further the RFI is to be approved by concerned site in charge of BMC (Sub Engineer) mentioning date, chainage and relevant particulars etc. for inspection before commencement of subsequent activity. BMC site in charge will verify that the work specified in the RFI is as prescribed in BOQ, drawings and technical specifications by conducting field tests/lab tests wherever required in accordance with specifications etc., and after satisfying himself shall convey his approval / rejection on one copy of the RFI by retaining other copy with him. The record of the tests conducted shall form part of records as mentioned in 11.10 above. The contractor shall not commence subsequent activity unless approval of site in charge is received.

The RFI shall be raised by contractor for approval of road crust layers i.e. right from original ground level, sub-grade level and further layers upto road top layer i.e. PQC top or BC / Mastic asphalt surface top. The RFIs should be supplemented by standard checklists wherever applicable.

11.11 SPECIFICATIONS FOR ITEMS OF BARRICADING.

Barricading shall be as per circular No MGC-F-6342 dated 05.05.2018 (copy uploaded with this tender) and as per the new design (copy uploaded with this tender). It will be binding on the qualifying bidder/agency to install the GPS trackers at the starting and end barricades provided along each work site. The installed GPS trackers shall be kept in working condition till the completion of the works. While shifting the barricades care shall be taken to keep the GPS tracker barricades at the site if the work is not completed. Further, The QR Code shall be provided on each panel of barricades and shall following information of the sites Viz. name of work, name of the contractors, name of all contractor's staff appointed for this particular project, Date of start and completion of the work, etc., and as required by Engineer-In-charge. Each Barricade shall have LED rope lighting which shall be kept on between sunset and sunrise or as directed by engineer-in-charge. Any innovative design/slogan/message as directed by the Engineer in-charge shall be displayed on said barricade. No extra payment will be made for the installation of the barricades or for providing the design/slogan/message/reflectors or the LED lighting or the installed GPS trackers as stated; contractors shall note the same and quote accordingly. The cost of power supply to the LED rope light shall be borne by the contractor and he shall quote the bid accordingly.

If barricades are not provided as per specification, the following penalties will be levied:

Sr. No.	For each Instance at each road	Penalty in Rs. Per Day
1	1 st instance	5,00,000/-
2	From 2 nd instance onwards	10,00,000/-

Penalty will be proposed by SE and AE and approved by Engineer-in-charge [E.E(Roads)].

11.12 SPECIFICATIONS FOR CONSTRUCTION OF ULTRA THIN WHITE TOPPING:

1.SCOPE

Ultra-thin white topping (UTWT) is a process where a thin layer of concrete [50 to 100 mm (2 to 4 in.)], usually with micro Silica, fibers and often of high strength (more than M40 grade of concrete), is placed over a prepared surface of distressed asphalt pavement. Ultra Thin White Topping (UTWT) may be adopted over distressed asphalt pavement after properly correcting its dimensions and shape by either milling the existing asphalt pavement or providing a profile correction course with Dense bituminous macadam (60/70 bitumen 5.5% by weight of total aggregate) over existing layers. Normally, UTWT is adopted over asphalt pavement. Guidance for the design and construction of UTWT may also be taken from IRC: 58, IRC 15, IRC 43, IRC: 57 and IRC: SP-76.

2.0 Types of White Topping

Concrete overlay, also termed as "white topping", is a plane concrete layer constructed on the top of an existing hot mix asphalt (HMA) pavements. Modern white topping overlays are classified by thickness and by bond with the HMA into three categories, namely,

- Conventional white topping
- Thin white topping (TWT) and
- Ultra thin white topping (UTWT)

While thickness of conventional white topping is 200 mm or more, that of TWT is between 100mm to 200mm and for UTW it is equal to or less than 100 mm. The conventional white topping overlays and the TWT - the latter is most, but not all cases are designed and constructed without consideration of bond between the concrete and

the underlying HMA. On the other hand, UTWT necessarily relies on such a bond. The UTWT consists of a High Performance concrete layer having thickness 100 mm -150 mm laid on the existing hot-mix asphalt pavement with necessary profile correction if required.

2.1 The type of existing pavements over which UTWT/TWT may be laid is given as:

- i) Asphalt pavement of minimum 75 mm thickness after milling,
- ii) Asphalt pavement of thickness less than 75 mm with profile correction course of Dense Bituminous macadam to have minimum asphalt pavement thickness of 75 mm,

2.2. Any distress in the existing pavement shall be repaired with suitable materials before laying any profile correction course/UTWT.

2.3 Badly cracked asphalt pavement, shall be removed and lower layers shall be rectified as per the specifications/drawings.

3. TYPE OF JOINTS

- i) Contraction Joints
- ii) Construction Joints
- iii) Longitudinal Joints

4.1. Details of the joints and their sealing with sealant or preformed seals are given in IRC 15 and IRC 57. In UTWT, dowel bars are not generally provided but normal tie bars are provided for construction joints at the end of day's work and for longitudinal joints in case bays are more than 3 m wide.

4.2 Initially, joint is cut to a depth of 1/3 of the slab's depth with width 3-5 mm sealing of joints may be carried as per IRC: 57 to protect the existing lower layer from degradation etc.

4.3. No expansion joints is required, however at every 15 m length a wooden board of width 6-10 mm may be used as construction joint with 2-3 tie bars in each panel with maximum joint spacing of 1.25 m. When width of UTWT lane is more than 1.25 m, a longitudinal joint is required.

5 MATERIALS

5.1. In the cement concrete, following materials may be additionally added as per the availability and cost effectiveness:

- i) Fly ash grade I (as per IS 3812-2003),
- ii) Granulated blast furnace slag (as per IS: 12089)
- iii) Silica fume (as per IS: 15388-2003 and IS 456)

5.2. These mineral admixtures reduce heat of hydration in the high strength concrete;

im- prove the density of concrete due to particle packing theory i.e. minimum void space and durability.

5.3. To improve the ductility of high performance/ high strength concrete, polymeric fibres may be added in the concrete upto 0.2 % by weight of cement and/or steel fibres as per IRC: SP-46-1997.

5.4. Use of above additional materials including chemical admixtures in the conventional concrete, improves the following properties of concrete:

- i.** Improvement in toughness,
- ii.** Long term mechanical properties,
- iii.** Early high strength,
- iv.** Ease of placement, cohesiveness and consolidation,
- v.** Volume stability,
- vi.** Longer life,
- vii.** Less abrasion,
- viii.** Least permeability,
- ix.** Improvement in load transfer at the joints due to improved aggregate interlocking
- x.** Improvement in bond between aggregate - cement mortar and existing bituminous layer with fresh concrete.

6.0 MIX PROPORTIONING AND STRENGTH OF CONCRETE

6.1. Concrete mixes used in UTWT/TWT are so proportioned that the concrete mix generally produces concrete of strength more than M 50 at 7 days. High performance concrete is normally preferred. The asphalt pavement shall be evaluated by examining pavement deficiencies (excessive deflection/bending of layers) using Benkelman Beam or any other suit-able device as per IRC Specifications prior to the selection of the mix, grade of concrete and the thickness of UTWT.

6.2. UTWT projects are generally constructed with concrete of mix having lower water/ cement ratio less than (0.4). The slump requirement (± 50 mm) for construction and placing and flow are achieved conveniently by the use of high range water reducers.

6.3. As mentioned in 8.0 vi) below as the pavement will be open to traffic immediately after 7 days of curing, the mix of M60 shall be so designed that the compressive and flexural strength parameters required at 28 days are achieved in 7 days. No separate payment for this will be made to the contractors.

7. CONSTRUCTION OF UTWT

7.1. Ultra thin white topping is used where the minimum thickness of sound asphalt layer is more than 75 mm, which is the basic requirement of its design as composite

pavement. The thicker asphalt pavement section improves the load carrying capacity of the system because it creates a thicker final composite structure. Ultra thin white topping improves the riding quality along with the load carrying capacity of the road system. Some of its salient features are:

- Joints spacing is normally kept at less than 1250 mm,
- More transfer of wheel load to the underlying asphalt layer due to the bond between the top and the existing bituminous layer, and
- Additional durability due to high performance fibre reinforced concrete.

7.2. Existing bituminous layer after milling shall be in good condition to minimize reflection cracks or sympathetic cracks. If locally any distress/ defects/ cracks are observed (up to 20% of the defined area), these shall be repaired/sealed using properly designed dense bituminous mixes. The top of milled surface and repaired portion shall be in level with each other. The cracks shall be repaired first with hot bitumen of grade 60/70, before laying UTWT and the surface is broomed by compressed air/vacuum pump to remove debris prior to placing of concrete. Sometimes, the surface of the asphalt is flushed with water to aid in

cleaning before overlay is applied. In case of non-availability of milling machine, UTWT may also be laid directly over the asphalt layer after properly repairing the distress or relaying with a fresh layer of dense bituminous macadam (DBM) of thickness 50 mm. Polythene sheet (of thickness 125 μ) which is used over dry lean concrete in conventional rigid pavement construction is not required in case of UTWT.

7.3. The joints, which are cut of width of 3-5 mm wide, and upto a depth of 1/3rd of UTWT, are not generally sealed because the compactness of the slabs which minimize joint movement. However, sealing of joints may be carried as per IRC: 57/ IRC: 15-2002, if rainfall is more than 1500 mm per year and/or width of joint is more than 5 mm. Fibres in the UTWT concrete minimize shrinkage cracks and aid in aggregate-interlock, load transfer by holding joints tightly together. After bonding, (which is the secret of UTWT) with asphalt pavement, it works as composite pavement.

8.0. STEPS OF CONSTRUCTION

i) Milling: The milling of the existing asphalt pavement provide removal of rutting, a roughened surface to enhance the bonding between the new concrete overlay and the existing asphalt pavement. The depth of milling depends upon the types and severity of distress especially the depth of rutting or other surface distortions and the available thickness of asphalt pavement. JCB may also be used gently for making the roughness in top surface of asphalt pavement at difficult locations. In case of non availability of the required machinery, a profile correction course of dense bituminous macadam may also be used to act as rough surface for laying UTWT.

ii) Repair: Repair of the distresses in the existing asphalt pavement is required before UTWT is applied.

iii) Cleaning: After milling or providing the profile correction course, the existing asphalt pavement, the top surface is cleaned to ensure bonding between the existing asphalt pavement and the new concrete overlay. Different methods of cleaning to remove slurry or foreign particles are given as:

- Air blasting/vacuum cleaner
- Power brooming
- Water blasting
- Sand blasting

iv) Place, Finish and Curing using Conventional Paving Techniques and Materials: After the milling operation/laying profile correction course, form work using steel channels or girder are fixed and stability of these is ensured simultaneously. Concrete is placed, finished and cured using conventional paving techniques and materials. Use of curb stone as form work is not preferred.

v) Joint Cutting

Timely joint cutting (within 12-16 hours of laying of UTWT) prevent cracking, minimize curling and warping stresses. The joint width may be 3 mm and depth $1/3^{\text{rd}}$ of the UTWT. The sealing of joint may be desirable. The slabs for UTWT shall be square shaped. The steel tie bars, dowel bars are generally not recommended as the load transfer is expected from stiff support of the underlying asphalt/ lean concrete/concrete pavement and aggregate interlock. However, tie bars (Plain) of length 500 mm, dia 10 mm at maximum spacing of 30 cm c/c may be provided at each construction butt type joint. There may be 2-3 tie bars in case of panel size of 1.25mX1.25m. Each properly aligned tie bar shall be at least 5 cm away from the joint/free edge. The minimum concrete cover around steel bars shall be 50 mm.

vi) Open to Traffic: The traffic can be opened when the UTWT/TWT attained the desired strength depending on the traffic loading condition. Usually, traffic may be opened after 7 days (age at which characteristic strength is achieved) of casting Paving Quality Concrete (PQC) slabs.

9.0 DESIGN OF UTWT

9.1. The basic requirement for the design of UTWT is the bond between the bituminous layer and the concrete which allows the concrete and asphalt to perform as a composite section and causes the layers to act monolithically and share the load with each other and also with the other lower layers. With bonding, the neutral axis in the concrete shifts from the middle to the concrete down towards the bottom of the

concrete and brings the stresses into a range the concrete can withstand.

9.2. For low traffic, minimum thickness of existing asphalt pavement may be 75 mm and for very heavy traffic, minimum thickness of asphalt pavement may be considered as 100 mm. On certain locations, where some spots of exposed base and sub base course are visible, the same shall be adequately re-compacted and proper asphalt pavement may be re-laid over it. The goal is to provide durable asphalt pavement to act as part of composite structure.

With UTWT, short joint spacing's are used so that the energy is absorbed by deflection rather than by bending.

9.3. Joint spacing's for UTWT overlays are very short in order to reduce the magnitude of curling and bending stresses. Joint spacing shall be 12 to 15 times the slab thickness. The slabs for UTWT shall be square shaped. The steel tie bars, dowel bars are generally not recommended as the load transfer is expected from stiff support of the underlying asphalt pavement and aggregate interlock.

11.13 Deleted.

11.14 Directions for use of Fly ash

1. I.S.I. mark fly ash conforming to IS 3812 shall be used 20% by weight of cement.
2. Test certificate from Manufacturer shall be produced for satisfying physical and chemical test properties as per IS 3812 before the use and for every batch of fly ash.
3. A separate silo shall be provided for stacking fly ash in the R.M.C. Plant.

11.15 Directions for use of Microsilica

1. I.S.I. Microsilica confirming IS: 15388:2003 shall be used not more than 10% by weight of cement.
2. Test Certificate from Approved Manufacturers shall be produced for satisfying physical and chemical test properties as per IS 3812 before the use and every batch of Microsilica.
3. A separate silo shall be provided for stacking micro silica in the RMC plant.

**11.16 TABLE - 1: INDIAN STANDARDS (IS and IRC) FOR
PAVEMENT CON-STRUCTION AND QUALITY CONTROL**

I - MATERIALS

Item	Specification	Method of test	Sampling
Cement	IS: 8112 (Gr.43), IS: 12269 (Gr. 53) Or Relevant IS	IS: 4031 (Pt. 1 to 14) IS: 4032 Or Relevant IS	IS: 4879 Or Relevant IS
Aggregate coarse & Fine	IS: 383	IS: 2386 (Pt. 1 to 8)	IS: 2430
Water	IS: 456	As per provision	As per provision
Admixture for concrete	IS: 9103	As per provision	As per provision
Hot applied sealing compound for joints	IS: 1834 of 1984	As per provision	As per provision
Concrete mix design	IS: 10262 IRC: 44 IRC: 59	As per provision	As per provision
Concrete strength		IS : 516	As per provision
Ready - mixed con- crete	IS: 4926	As per provision	As per provision

II - CONSTRUCTION

Item	Specification	Method of test	Sampling
Construction of concrete pavement	IRC: 15	As per provision	As per provision
Lean cement concrete base/ subbase	IRC: 74	As per provision	As per provision
Curing cement concrete pavement	IRC: 84	As per provision	As per provision
Installation of joints in concrete pavement	IS: 6509	As per provision	As per provision
Sealing of joints in con- crete pavements	IS: 1834 IRC: 57	As per provision	As per provision

TABLE - 2 : MINIMUM TEST FREQUENCIES FOR QUALITY CONTROL OF CONCRETE ROAD CONSTRUCTION

I - MATERIALS

Item	Test	Control Crite- rion	Frequency
Cement	Physical and chemical test	Relevant IS	Once for each source of supply for approval of the source and subsequently for every batch.
Coarse & fine aggregates	--do- (Including soundness & alkali reactivity)	IS: 383	Once for each source
Water	Chemical Test	IS: 456	--do--
Expansion	Jt. Filter board	IS: 1838	--do--
Jt. Sealing compound		IS: 1834 of 1984	--do--
10/20 Grade Bitumen	Physical		--do--

II- DURING CONSTRUCTION : MATERIALS :

Cement	Strength	IS: 8112	for each lot of cement received
Coarse & fine aggregate	Gradation	IS: 383	Regularly as required subject to a minimum of tests per day.
	Moisture content	--do--	
Coarse aggregate	Los Angeles Abrasion Value	IS: 383	Once for every change of source.
	Aggregate impact value Specify gravity		--do--
Flakiness Index		--do--	--do--
Elongation Index		--do--	--do--

Item	Test	Control Criterion	Frequency
<u>CONCRETE</u>			
Workability			One per transit mixer
Concrete strength			Beam/Cube samples, as specified for each age of 7 days, 14 days and 28 days for every days
Checking surface evenness with 3 mt. straight-edge and wedge gauge			Three longitudinal lines along with the slab length - one in the end middle - third end the two edge third strips, along the line of maximum unevenness.
<u>DOWEL BARS</u>			
Alignment (being in a plane parallel to the surface of the base course and being also parallel to the center line of the slab).			Each dowel bar, after fixing in position.
<u>TIE BARS</u>			
Mid -height positioning			Each tie bar

TABLE : 3 ADDITIONAL QUALITY CONTROL CRITERIA AND TOLERANCES

Position	Criteria	Tolerance
Sub grade/ Sub base under Lean Concrete base	Full compaction K-Value 5.5 kg/m ³ or C.B.R. 10	No minus tolerance
Lean Concrete base	Grade: M-10 Surface unevenness under 3 M straight edge Curing : 7 days or till laying of concrete slab in case the slab is laid earlier but not earlier than 24 hours.	Tolerance level for characteristic strength assessment 1 in 40 Not more than 10 mm

Cement concrete pavement	Grade: M 35 & above Workability Curing: 14 days cure by ponding with water. Curing on the day of casting (prior to curing by ponding) shall be done with wet hessian cloth and curing compound	Tolerance level for characteristic strength assessment: 1 in 40 +/- 10 mm 50 mm (Slump) maximum No tolerance
Dowel Bars	Length and dia. Placement with equal length vis-à-vis center line of the joint Horizontal & Vertical alignment including that of dowel cap.	Should not be smaller than stipulated value <u>± 4.5 mm</u>

TABLE: 4 MINIMUM TEST FREQUENCIES FOR QUALITY ASSURANCE/ ACCEPTANCE OF CONCRETE ROAD CONSTRUCTION

Parameter	(M-10) Lean Concrete Base	(M-15) & above Cement Concrete Pavement
Strength (Core testing)		12 nos. of 150 mm dia. cores as specified in relevant clauses. Acceptance criteria as per I.S. 1199 and I.S. 516, only for thickness of concrete is more than 20 cm
Surface even-ness	3 longitudinal lines (as for quality control)	3 longitudinal line (as for quality control) as specified in relevant clauses
Surface defects	Full surface	Full surface

TABLE: 5 ACCEPTANCE CRITERIA

Parameter	On completion, Before/within two months of opening to traffic	At the end of Defect liability as per 8.1 Annexure "A"
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Strength	<p>“Characteristic strength for cubes tested at the age of 28 days analyzed for complete work to exceed the specified strength”. In-dividual core strength test results, corrected for age, H/D ratio & shape (cylinder to cube) upto the specified strength. The characteristic strength (28 days) to be not less than the specified strength (for a tolerance level of 1 in 40).</p>	<p>Before the end of the defect liability period, the site will be jointly inspected along with the contractor's representative/ Engr. & defects observed will be listed & the necessary rectification will be carried out as directed by Ch Engr.</p> <p>(C.C. Roads & Tr.) in accordance with the relevant specifications & clauses mentioned in Special Directions/ Conditions to the Tenderers.</p>
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11.17 SEALING OF JOINTS IN RIGID PAVEMENTS -

The sealing of joints in rigid pavements shall be accomplished with the use of appropriate grade of sealing compound (IS: 1834 - 1984). The sealing compound shall be heated to required temperature before filling into the joint.

11.18 Storm Water Drain Works :

11.18.1 The work under this contract requires execution in Nallas/S.W.D subjected to tidal fluctuations moreover, even during fair-season the Nallas/S.W.D carry appreciable quantity of sullage. This fact should be borne in mind by the tenderers while quoting their percentage.

11.18.2 During the course of the work it will be essential to construct temporary coffer dams as and when found necessary and extensive pumping will have to be resorted to for making the site for working conditions. It may be noted that no separate payment for this purpose will be made either for constructing cofferdams or pumping.

11.18.3. The coffer dams should be constructed as found necessary for proper progress of the work and approved by the Engineer.

11.18.4 In order to neutralize the action of possibility of uplift forces 150 mm diameter, M. S. pipes 250 mm long and 10 mm thick shall be inserted vertically in the concrete bed of the nalla before concreting. These pipes will be in two rows at a distance of quarter width from the nalla edge and 3 m centre to centre and in a staggered manner. It may be noted that no separate payment will be made for this purpose. However, while paying for the concreting in the nalla bed the whole area of the nalla bed shall be taken into consideration i.e., no deduction in the concrete quantity due to the pipes.

11.18.5 Adequate working areas may not be available for construction activities. Hence, the

contractors may be required to construct accesses wherever feasible, at their own cost. Arrangements for movement of the trucks, machinery etc., along the entire length of the work will also have to be done by the contractors at their own cost. Wherever it would not be possible for the transport to reach the site of work, the contractors will have to resort to carrying the material by head-load for which no extra payment will be made. During excavation for the work, it may be possible for the contractors to stack excavated material required for back filling after completion of the retaining wall, due to inadequate working place. In such an eventuality, the contractors would be required to transport the excavated material away from the site and bring back the same for refilling at their own cost.

11.18.6 The contractor should note that in case where it will not be possible to provide necessary water way for the diversion of water course of nalla due to its inadequate width it will be necessary to block the complete water way and make such arrangements either to divert the flow or to resort to pumping the water from upstream side to downstream of work site by using any number of pumps for any length of time. Waterway of the diverted way shall be more than original. Permission to block the complete water way shall be given only after inspecting this arrangement. If work cannot be completed before rains, original water way be restored. No extra payment on this account shall be entertained

11.18.7 The payment for excavation shall be made on cross sectional basis. Before starting the work, initial levels will be taken at every 7 m or less depending on site conditions along the entire length of the proposed work. Levels at every 5.00 m intervals would be taken along the width of the section. The quantity of excavation would be computed on the basis of levels thus taken by resorting to the prismatic Formula. For establishing the datum line, the average of the two endpoints of the ultimate cross-section required for excavation work will be considered.

11.18.8 Normal foundation depth in the section is based on the assumption that good strata (i.e. having bearing pressure of 15 t/Sq. m) will be available at a depth of 1.5 m below the final invert level and upto the top of rubble-soling. In case the soil is not of good quality, it will be necessary to have a deeper excavation, as directed by the Engineer, and the section of the masonry walls will be proportionately modified and payment will be made accordingly.

11.18.9 Repairs to the damaged S.W. open drain, drain pipes, water entrances shall be carried out by the contractor, as directed by the Engineer, for which payment will be made to the contractor.

11.19 Water Main Works:

11.19.1 The work of water mains shall be considered complete only after successful pressure test, contractor shall arrange for testing as specified, otherwise, the same shall be tested by the B.M.C. at the risk and cost of the contractor.

11.19.2 If a part of a completed line is required for commissioning, the same shall be handed over to the Corporation after specified testing.

11.19.3 No extra payment for carrying the material by head load to work site shall be considered under any circumstances.

11.19.4 The cross connection works etc. are required to be planned in view of the water supply hours in a particular area. Extra payment shall not be considered for works carried out during early, late or night hours. If contractor fail to carry out the work within the non-supply hours, the same shall be carried out by B.M.C. at the risk and cost of the contractor and recoveries shall be affected from the dues payable to the contractor.

11.19.5 The contractor, at their cost, shall submit two sets of "As laid" drawings of water main showing actual alignment, levels, dipping etc. as per the offsets and levels taken during the execution of the work.

11.19.6 The contractor (s) shall note that only 95% payment of payable amount towards the water mains will be released for the completed work and balance 5% shall be released after completing the following works :-

- a) Testing of pipeline satisfactorily and obtaining necessary Test Certificate.
- b) Reinstatement of trenches.
- c) Returning of reclaimed materials to the Municipal Store.

11.19.7 The contractor shall provide at his cost 20 mm. thick 3 m x 2 m or 4m x 2 m M.S. plates for covering the trenches temporarily, as directed by the Engineer.

11.20 Trench Reinstatement:

11.20.1 The backfilling of trench shall be done only with graded granular material up to subgrade.

11.20.2 Thereafter the designed crust as directed by E.I.C. shall be laid.

11.20.3 The rolling shall be done only with the use of vibratory roller.

11.20.4 During reinstatement, heavy duty steel plate shall be provided at places, as directed by E.I.C. to facilitate vehicular & pedestrian traffic. Similarly, provisions of barricades, informative boards, adequate lighting is must during the period of reinstatement.

11.20.5 Trenches taken in monsoon shall be reinstated by using cold mixes from approved manufacturers

(A) Materials:

- (i) Sealing compound conforming to IS: 1834
- (ii) Primer conforming to IS 3384

11.21 SELECTION OF MATERIAL

1. All materials brought on the site of work and meant to be used in the same, shall be the best of their respective kinds and to the approval of the Engineer. The Engineer or his representative will accept that the materials are really the best of their kinds, when it is proved beyond doubt that no better materials of the particular kind in question are available in the market.
2. The contractor shall obtain the approval of the Engineer of samples of all materials to be used in the works and shall deposit these samples with him before placing an order for the materials with the suppliers. The materials brought on the works shall conform in every respect to their approved samples. Fresh samples shall be deposited with the Engineer when-ever the type or source of any material changes.
3. The contractor shall check each fresh consignment of materials as it is brought to the site of works to see that they conform in all respects to the Specifications of the samples approved by the Engineer, or both.
4. The Engineer will have the option to have any of the materials tested to find out whether they are in accordance with the Specifications and the Contractor will bear all expenses for such testing. All bills, vouchers and test certificates, which in the opinion of the Engineer or his representative are necessary to convince him as to the quality of the materials or their suitability shall be produced for his inspection when required.
5. Any materials that have not been found to conform to the specifications will be rejected forthwith and shall be removed from the site by the contractor at his own cost within 24 hours.
6. The Engineer shall have power to cause the Contractors to purchase and use such materials from any particular source, as may in his opinion be necessary for the proper execution of the work.
7. Notwithstanding the source, the sand shall be washed using sand washing machine before use.

11.22 Specification for stamp concrete/Stencil concrete:

The stamp/stencil concrete work shall be carried out strictly as per Description of USOR item and as per Footpath policy dated ChE/8412/Rds& Tr dated 02.02.2019. further, The two coats of sealants shall invariably be provided on the stamp/stencil concrete failing which entire cost of stamping/stenciling i.e. item no R2-RW-10-63 will be recovered as penalty.

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SECTION 12
FRAUD AND CORRUPT
PRACTICES

FRAUD AND CORRUPT PRACTICES

- The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, the Authority may reject an application without being liable in any manner whatsoever to the Applicant if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process.
- Without prejudice to the rights of the Authority under relevant Clause hereinabove, if an Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, such Applicant shall not be eligible to participate in any tender or RFQ issued by the Authority during a period of 2 (two) years from the date such Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- For the purposes of this Clause, the following terms shall have the meaning hereinafter respectively assigned to them:

A. **“corrupt practice”** means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or

save and except as permitted under the relevant sub clause, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Concession Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Concession Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority in relation to any matter concerning the Project;

B. **“fraudulent practice”** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process;

C. **“coercive practice”** means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any persons participation or action in the Bidding Process;

- D. **“undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
- E. **“Restrictive practice”** means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.
- F. If the Employer/Financier determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days’ notice to the Contractor, terminate the Contractor's employment under the Contract and expel him from the Site, and the provisions of relevant Clause shall apply as if such expulsion had been made.
- G. Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with relevant Clause.

For the purposes of this Sub-Clause:

- i. “corrupt practice” is the offering, giving, receiving to soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes Financier staff and employees of other organizations taking or reviewing procurement decisions.
- iii. “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- iv. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- v. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- vi. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in

orderto materially impede the Financier investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or frompursuing the investigation; or

- vii. vii. acts intended to materially impede the exercise of the Financer’s inspection and audit rights provided.
- viii. viii. “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.
- ix. ”parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, noncompetitive levels.
- x. a “party” refers to a participant in the procurement process or contract execution.

SECTION 13

PREBID MEETING

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PREBID MEETING

Pre-bid meeting of the interested parties shall be convened at the designated date, time and place. A maximum of three representatives of each Applicant shall be allowed to participate on production of authority letter from the Applicant.

During the course of Pre-bid meeting, the Applicants will be free to seek clarifications and make suggestions for consideration of the Authority. The Authority shall Endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

The minutes of pre-bid meeting will be displayed on BMC portal and the same shall form part of contract document.

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SECTION -14
LIST OF APPROVED BANKS

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LIST OF APPROVED BANKS

1. The following Banks with their branches in Greater Mumbai and in suburbs and extended suburbs up to Virar and Kalyan have been approved only for the purpose of accepting Demand Draft from 1997-98 onwards until further instructions.

2. The Demand draft issued by branches of approved Banks beyond Kalyan and Virar can be accepted only if the said Demand draft is countersigned by the Manager of a branch of the same Bank, within the Mumbai Limit categorically endorsing thereon that said Demand draft is binding on the endorsing Branch of the bank within Mumbai limits and is liable to be on forced against the said branch of the Bank in case of default by the contractor/supplier furnishing the Demand Draft.

List of approved Banks:- (Please refer Circular u/no. FBK-25 dtd. 30.10.2014)

A	S.B.I and its subsidiary Banks
1	State Bank Of India.
2	State Bank Of Bikaner & Jaipur.
3	State Bank Of Hyderabad.
4	State Bank Of Mysore.
5	State Bank Of Patiyala.
6	State Bank Of Saurashtra.
7	State Bank Of Travankore.
B	Nationalized Banks
8	Allahabad Bank.
9	Andhra Bank.
10	Bank Of Baroda.
11	Bank Of India.
12	Bank Of Maharashtra.
13	Central Bank Of India.

14	Dena Bank.
15	Indian Bank.
16	Indian Overseas Bank.
17	Oriental Bank Of Commerce.
18	Punjab National Bank.
19	Punjab & Sindh Bank.
20	Syndicate Bank.
21	Union Bank Of India.
22	United Bank Of India.
23	UCO Bank.
24	Vijaya Bank.
24A	Corporation Bank.
C	Scheduled Commercial Banks
25	Bank Of Madura Ltd.
26	Bank Of Rajasthan Ltd.
27	Banaras State Bank Ltd.
28	Bharat Overseas Bank Ltd
29	Catholic Syrian Bank Ltd.
30	City Union Bank Ltd.
31	Development Credit Bank.
32	Dhanalakshmi Bank Ltd.
33	Federal Bank Ltd.
34	Indsind Bank Ltd.
35	I.C.I.C.I Banking Corporation Ltd.
36	Global Trust Bank Ltd.
37	Jammu & Kashmir Bank Ltd.
38	Karnataka Bank Ltd.
39	KarurVysya Bank Ltd.
40	Laxmi Vilas Bank Ltd.

41	Nedugundi Bank Ltd.
42	Ratnakar Bank Ltd.
43	Sangli Bank Ltd.
44	South Indian Bank Ltd.
45	S.B.I Corporation &Int Bank Ltd.
46	Tamilnadu Mercantile Bank Ltd.
47	United Western Bank Ltd.
48	Vysya Bank Ltd.
D	Schedule Urban Co-op Banks
49	Abhyudaya Co-op Bank Ltd.
50	Bassein Catholic Co-op Bank Ltd.
51	Bharat Co-op Bank Ltd.
52	Bombay Mercantile Co-op Bank Ltd.
53	Cosmos Co-op Bank Ltd.
54	Greater Mumbai Co-op Bank Ltd.
55	JanataSahakari Bank Ltd.
56	Mumbai District Central Co-op Bank Ltd.
57	Maharashtra State Co-op Bank Ltd.
58	New India Co-op Bank Ltd.
59	North Canara G.S.B. Co-op Bank Ltd.
60	Rupee Co-op Bank Ltd.
61	Sangli Urban Co-op Bank Ltd.
62	Saraswat Co-op Bank Ltd.
63	ShamraoVithal Co-op Bank Ltd.
64	Mahanagar Co-op Bank Ltd.
65	Citizen Bank Ltd.
66	Yes Bank Ltd.
E	Foreign Banks
67	ABM AMRO (N.Y.) Bank.

68	American Express Bank Ltd.
69	ANZ Grindlays Bank Ltd.
70	Bank Of America N.T. & S.A.
71	Bank Of Tokyo Ltd.
72	Bankindosuez.
73	BanqueNationale de Paris.
74	Barclays bank.
75	City Bank N.A.
76	Hongkong& Shanghai banking Corporation.
77	Mitsui Taiyokbe Bank Ltd.
78	Standard Chartered Bank.
79	Cho Hung Bank.

NOTE: IDBI bank BG not Valid as per circular no CA/FBK/303 Dt:17.03.2018

SECTION -15

APPENDIX

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FORM OF TENDER

The Municipal Commissioner for Greater Mumbai

Subject: Name of Work and Bid Number

Sir,

I/ We have read and examined the following documents relating to the construction of

- i. Notice inviting tender.
- ii. Directions to tenderers (General and special)
- iii. General condition of contract for Civil Works of the Brihanmumbai municipal corporation as amended up to date.
- iv. Relevant drawings
- v. Specifications.
- vi. Special directions
- vii. Annexure A and B.
- viii. Bill of Quantities and Rates.

1A. I/We _____

(full name in capital letters, starting with surname), the Proprietor/ Managing Partner/ Managing Director/ Holder of the Business, for the establishment / firm / registered company, named herein below, do hereby offer to

.....

.....

Referred to in the specifications and schedule to the accompanying form of contract of the rates entered in the schedule of rates sent herewith and signed by me/ us” (strike out the portions which are not applicable).

1B. I/We do hereby state and declare that I/We, whose names are given herein below in details with the addresses, have not filled in this tender under any other name or under the name of any other establishment

/firm or otherwise, nor are we in any way related or concerned with the establishment /firm or any other person, who have filled in the tender for the aforesaid work.”

2. I/We hereby tender for the execution of the works referred to in the aforesaid documents, upon the terms and conditions, contained or referred to therein and in accordance with the specifications designs, drawings and other relevant details in all respects.

* At the rates entered in the aforesaid Bill of Quantities and Rates.

3. According to your requirements for payment of Earnest Money amounting to Rs. _____ /-(Rs. _____)

I/We have deposited the amount through online payment gateways with the C.E. of the Corporation not to bear interest

4. I/We hereby request you not to enter into a contract with any other person/s for the execution of the works until notice of non/acceptance of this tender has first been communicated to me/us, and in consideration of yours agreeing to refrain from so doing I/we agree not to withdraw the offer constituted by this tender before the date of communication to me/us of such notice of non/acceptance, which date shall be not later than ten days from the date of the decision of the Standing Committee or Education Committee of the Corporation, as maybe required under the Mumbai Municipal Corporation Act, not to accept this tender. (Subject to condition 5 below).

5. I/We also agree to keep this tender open for acceptance for a period of 180 days from the date fixed for opening the same and not to make any modifications in its terms and conditions which are not acceptable to the Corporation.

6. I/We agree that the Corporation shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely, if.

a. I/We fail to keep the tender open as aforesaid.

b. I/We fail to execute the formal contract or make the contract deposit when called upon to do so.

c. I/we do not commence the work on or before the date specified by the Engineer in his work order.

7. I/We hereby further agree to pay all the charges of whatsoever nature in connection with the preparation, stamping and execution of the said contract.

8. I/We further agree that, I/we shall register ourselves as 'Employer' with the Bombay Iron and Steel Labour Board' and fulfill all the obligatory provisions of Maharashtra Mathadi, Hamal and other Manual workers (Regulation of Employment and Welfare) Act 1969 and the Bombay Iron and Steel unprotected workers Scheme 1970.

9. "I/We..... have failed in the accompanying tender with full knowledge of liabilities and, therefore, we will not raise any objection or dispute in any manner relating to any

action, including forfeiture of deposit and blacklisting, for giving any information, which is found to be incorrect and against the instructions and directions given in this tender.

10. "I/We further agree and undertake that in the event it is revealed subsequently after the allotment of work/contract to me/us, that any information given by me/us in this tender is false or incorrect, I/We shall compensate the Brihanmumbai municipal corporation for any such losses or inconvenience caused to the Corporation in any manner and will not resist any claim for such compensation on any ground whatsoever. I/we agree and undertake that I/we shall not claim in such case any amount by way of damages or compensation for cancellation of the contract given to me/us or any work assigned to me/us or is with-drawn by the Corporation,"

Address

Yours faithfully,

.....

.....

Digital Signature of the Tenderer or the Firm

1.....

2.....

3.....

4.....

Full Name and private residential address of all the partners constituting the Firm

A/c No.

.....

- | | | |
|----|-------|-----------------|
| 1. | | Name of Bank |
| 2. | | |
| 3. | | Name of Branch |
| 4. | | |
| 5. | | Vender No. |

- b) The Bid:
- c) Addendum to Bid; if any
- d) Tender Document
- e) The Bill of Quantities:
- f) The Specification:
- g) Detailed Engineering Drawings
- h) Standard General Conditions of Contracts (GCC)
- i) All correspondence documents between bidder and BMC

3) In consideration of the payments to be made by the Commissioner to the contractor as hereinafter mentioned the contractor hereby covenants with the Commissioner to construct, complete and maintain the works in conformity in all respects with the provision of the contract.

4) The Commissioner hereby covenants to pay to the Contractor in consideration of the construction, completion and maintenance of the works the contract sum, at times and in the manner prescribed by the contract.

IN WITNESS WHERE OF the parties hereto have caused their respective common seals to be herein to affixed (or have hereunto set their respective hands and seals) the day and year above written.

Signed, Sealed and delivered by the contractors

In the presence of

Trading under the name and style of

Full Name

Address

Contractors

Signed by the Director (ES&P) in the presence of

ExCity/ WS/ ES

Director (ES&P)

The Common seal of the Brihanmumbai municipal corporation was hereunto affixed on the..... 20
in the presence of two members of the Standing Committee.

1.

1.

2.

2.

And in the presence of the Municipal Secretary

Municipal Secretary

ANNEXURE " A "

Name of work: W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S. (Bid No 7200034714)

- 1.) The Engineer for this work: Chief Engineer (Roads& Traffic)
Dy. Ch. Eng.(Roads) WS
Exe. Eng. (Roads) WS

2.) Estimated cost of Tender:

Sr. No.	Description of work	Total Amount Rs.
1	<u>W-415-Improvement Of various Roads in CC road/CC Passage & Side Strips in CC Passage in R/South, R/Central & R/North ward in Zone-VII of W.S</u>	Rs. 1073,93,65,732/-
	Total Amount	Rs. 1073,93,65,732/-

3.)

Earnest Money (1% of the Estimated cost)	Rs. 1073,94,000/-
---	--------------------------

4.) Time Period: - 24 Months (Excluding Monsoon)

5.) The DLP shall be as below:

DEFECT LIABILITY PERIOD FOR VARIOUS ACTIVITIES	<p>1.) For Cement Concrete road work having thickness 280 mm and above 10 years and 5 years for all other components of the roads i.e sidestrip, footpath, SWD, thermoplastic paint, kerbstones, watertables, street furniture, signboards etc.</p> <p>2) Mastic Asphalt work with full crust: 5 years for all other components of the road i.e carriageway, sidestrip, footpath, SWD, thermoplastic paint, kerbstones, watertables, street furniture, signboards etc.</p> <p>3) C.C Passage/sidestrip in CC passage/UTWT/ TWT road : 5 years for all other components of the road i.e carriageway, sidestrip, footpath, SWD, thermoplastic paint, kerbstones, watertables, street furniture, signboards etc.</p>
--	---

	<p>4) Resurfacing in Bituminous Concrete or Mastic asphalt: 2 years</p> <p>5) Any other work not specified above – 3 Years.</p>
--	---

6. Percentage to be charged as supervision charges for the work got executed through other means 10% percent.

The “Actual cost of the work” shall mean in the case of percentage rate contracts the actual cost of the work executed at the rates as mentioned in the Contract Schedule adjusted by the Contractor's percentage rate and cost of extra and excess, but excluding the cost on account of Water Charges and Sewerage Charges if any, payable by the contractor and also excluding cost on account of price variation claims as provided in price variation clause as amended up to date.

1. In case of item rate contracts the actual cost calculated for the work executed at the rates mentioned in the contract schedule for different items including cost of excess and extra items of the work excluding the cost of water charges and sewerage charges if any, payable by the contractor and excluding cost on account of price variation claims as provided in extra excess conditions as amended up to date.

2. In case of lump sum contract the cost of the work actually carried out as per break up and programme of the work and the schedule of payment included in the contract including cost of any excess and/or extra items, of the work, excluding the cost on account of water charges and

sewerage charges and also excluding cost on account of price variation claims as provided in extra excess conditions as amended up to date.

3. The road wise DLP will be applicable if road wise completion certificate is submitted by the contractor with all the required documents and should be approved by Engineer in charge /Executive Engineer.

Annexure- B

PRE-CONTRACT INTEGRITY PACT

Subject: Name of Work and Bid Number

The Bidder commits himself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of his bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commits himself to the following:-

1. The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.
2. The Bidder further undertakes that he has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other Contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other Contract with the Government.
3. The Bidder will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
4. The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
5. The Bidder, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BMC or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
6. The Bidder shall not use improperly, for purposes of competition or personal gain, or pass onto others, any information provided by the BMC as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The Bidder also undertakes to exercise due and adequate care

lest any such information is divulged.

7. The Bidder commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

8. The Bidder shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

9. The Bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, the Authority may reject an Application without being liable in any manner whatsoever to the Applicant if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process

For the purposes of this Clause 9, the following terms shall have the meaning herein after respectively assigned to them:

1. “fraudulent practice” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process ;

1. “coercive practice” means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any persons participation or action in the Bidding Process;

2. “undesirable practice” means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

3. “restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

Signature of Tenderer/Bidder

Annexure- C
(On Rs. 500/- Stamp Paper)
DECLARATION CUM INDEMNITY BOND

Subject: Name of Work and Bid Number

I, _____ of _____, do hereby declared and undertake as under.

1. I declare that I have submitted certificates as required to Executive engineer

(Monitoring) at the time of registration of my firm/company____ and there is no change in the contents of the certificates that are submitted at the time of registration.

2. I declare that I _____ in capacity as Manager/Director/Partners/Proprietors of _____ has not been charged with any prohibitory and /or penal action such as banning (for specific time or permanent)/de-registration or any other action under the law by any Government and/or Semi Government and/or Government undertaking.

3. I declare that I have perused and examined the tender document including addendum, condition of contract, specifications, drawings, bill of quantity etc. forming part of tender and accordingly, I submit my offer to execute the work as per tender documents at the rates quoted by me in capacity as _____ of _____.

4. I further declare that if I am allotted the work and I failed to carry out the allotted work in accordance with the terms and conditions and within the time prescribed and specified, BMC is entitled to carry out the work allotted to me by any other means at my risk and cost, at any stage of the contract.

5. I also declare that I will not claim any charge/damages/compensation for non availability of site for the contract work at any time.

6. I declare that I will positively make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge.

Signature of Tenderer/Bidder

Annexure-D

Subject: Name of Work and Bid Number

RATE ANALYSIS								
R2-RW 10.33	Providing & laying M-40 C.C.avg.	Unit	Quantity	Rate Rs	Cost Rs	GST %	GST Amount	Amount Including GST
	Unit = cum							
	a) Labour (for 43.875 cum) i.e for 45x3.25x0.3 M							
	mukadam	day	0.5			0.18		
	Mason	day	1			0.18		
	Mechanic	day	0.2			0.18		
	Unskilled Labour(M)	day	1			0.18		
	Unskilled Labour (female)	day	1			0.18		
	Bhisti(14 days@0.25)	day	3.5			0.18		
	Labour Total							
	Total for 43.875 cum =	43.875						
	Cost per cum =							
	b) Material							
	RMC Concrete M 40 (Plant)	Cum	1			0.18		
	Metal I & II	cum				0.05		
	Sand	cum				0.05		
	Ice flakes	kg				0.18		
	Water for curing	lit	1000			0		
	Admixtures	lit				0.18		
	Curing compound	lit	0			0.18		
	Bitumen(VG-30)	kg	0.32			0.18		
	Cost for 43.875 CUM (c+d)	43.875						
	c) Machinery							
	Needle Vibrator	day	1			0.18		
	Screed Vibrator	day	1			0.18		
	Plate Vibrator	day	0			0.18		

	Machinery							
	d) Formwork							
	Approx. 43.875 M3							
	Formwork	sqm	28.95					
	Cost per cum =							
	e) Cost of transportation.					0.18		
	f) Fixed cost of the batch mix plant							
	Total =							
	GST on Labour							
	GST on Material							
	GST on Machinery							
	GST on Transportation							
	f) Contractor's profit and Overhead charges @ 15% on (a+b+c+d+e)							
	Rate per cum =							
				say				
<u>Sign & Seal of the Tenderer</u>								

- 1) Rates shall be quoted in the prescribed format as directed by the engineer-in-charge only, without changing the quantity and units. Bidder shall fill the rates only, strictly no change in units, quantity or any other changes of the rate analysis allowed. Rate Analysis in prescribed format shall be submitted online (within 3 working days) from the date of communication on email to submit rate analysis, failing which 10% EMD will be forfeited.
- 2) Overheads and Profit percentage shall be as per contractors working
- 3) Bidder/s shall submit basic current market rate of individual items like cement, Coarse aggregate, fine aggregate, Tor steel, mild steel, Bitumen, Bricks, etc. (included in BOQ) separately.

- 4) Description used in prevailing USoR for particular item shall be used as it is, while submitting Rate Analysis online. In case of any discrepancy bidder may approach to engineer in charge for formats of rate analysis, unit, quantity mentioned herein. decision of Engineer in-charge will be binding on bidder.
- 5) If the quantities in above format/sequence are changed or if any discrepancies are found, the rate analysis submitted by bidder/s will be treated as non-workable.
- 6) Bidder/s shall submit quotation/consent from the reputed / registered supplier's / manufacturers of various materials along with the address, GST registration certificate and email-id of supplier/s.
- 7) Bidder/s shall submit the GST Certificate of the supplier/s of various material.

Annexure-E

Irrevocable Undertaking

(on Rs.500/-Stamp Paper)

Subject: Name of Work and Bid Number

I, Shri/Smt.....aged,years Indian Inhabitant. Proprietor/Partner/Director of M/s Resident at do hereby give irrevocable undertaking as under;

- 1) I say & undertake that as specified in section 171 of CGST Act, 2017, any reduction in rate of tax on supply of goods or services or the benefit of input tax credit shall be mandatorily passed on to BMC by way of commensurate reduction in prices.
- 2) I further say and undertake that I understand that in case the same is not passed on and is discovered at any later stage, BMC shall be at liberty to initiate legal action against me for its recovery including, but not limited to, an appeal to the Screening Committee of the GST Counsel.
- 3) I say that above said irrevocable undertaking is binding upon me/ my partners/company/other Directors of the company and also upon my/our legal heirs, assignee, Executor, administrator etc.
- 4) If I fail to compliance with the provisions of the GST Act, I shall be liable for penalty/punishment or both as per the provisions of GST Act.

Whatever has been stated here in above is true & correct to my/our ownknowledge & belief.

Solemnly affirmed at

DEPONENT

This day of

BEFORE ME

Interpreted Explained and Identified by me.

ANNEXURE 'F'

(on Rs.500/-Stamp Paper)

I _____ of _____ do hereby undertake as under

Our _____ firm M/s. _____ have submitted bid for the work of “ _____ ”.

I hereby give undertaking that if the said work is entrusted to our firm, the same will be completed within stipulated time period mentioned in the tender.

Sign & Seal of the Tenderer

Annexure -G

**IRREVOCABLE REGISTERED UNDERTAKING - CUM- DECLARATION-CUM-
INDEMNITY BOND**

(Rs.500 /- Stamp Paper)

*(To be signed and furnished jointly by Contractor and Supplier of RMC/
DLC/GSB/WMM/DBM/BC/Mastic)*

To,
The Municipal commissioner,
Brihanmumbai municipal corporation
Fort, Mumbai

Sub:- Improvement of ____ under work code _____ (Bid No.....)

I, Shri / Smt. ____ aged, ____ years, Indian Inhabitant, Proprietor / Partner / Director of M/s ____ (THE CONTRACTOR) Resident at _____ and I, Shri / Smt. ____ aged, ____ years, Indian Inhabitant, Proprietor / Partner / Director of M/s ____ (THE SUPPLIER OF ____) Office address at _____ jointly and severally declare to supply / procure Ready Mix Concrete of grades M10, M15, M20, M25, M30, M35, M40, M60, Dry Lean Concrete, Granular Sub Base, Wet Mix Macadam, Dense Bituminous Macadam, Bituminous Concrete, Mastic Asphalt, etc., and any other mix for the project undertaken by Brihanmumbai municipal corporation for Improvement of ____ under work code _____.

We say and declare and undertake that we are bound by the terms and conditions laid down in the Registration / renewal of registration of RMC Plant / Hot Mix Plant / Crusher / WMM Plant ____ situated at ____ issued U/No. ____ and undertake to strictly adhere by the same. (Attested copy of registration and renewal attached herewith).

We specifically hereby:

Declare and Undertake that the requisite raw materials viz. Cement, Sand, Aggregates, Crushed Sand, Admixtures, Water, Bitumen, etc., and any other material required and that will be used for production of the Ready Mix Concrete / Dry Lean Concrete / Granular Sub Base / Wet Mix Macadam /Dense Bituminous Macadam / Bituminous Concrete / Mastic Asphalt, etc. and any other mix required for the execution of the work; conform to the quality norms as per IRC, MoRTH, IS Codes, BMC specifications, etc., and are also as per the Mix Design approved by the competent authority from time to time.

Declare and Undertake that Batching equipment / Hot Mix Plant / Crusher / WMM Plant, etc., and allied accessories are calibrated and the valid certificate to that effect will be made available for inspection whenever demanded.

Declare and Undertake that the Ready Mix Concrete / Dry Lean Concrete / Granular Sub Base / Wet Mix Macadam / Dense Bituminous Macadam / Bituminous Concrete / Mastic Asphalt, etc., and any other mix required for the execution of the work; produced, supplied, delivered, placed on site will be tested in the plant laboratory as per prevailing norms before it is delivered as per the requirement of relevant IS codes and assure that it conforms to the quality norms mentioned therein.

Declare and Undertake that the Ready Mix Concrete / Dry Lean Concrete / Granular Sub Base / Wet Mix Macadam / Dense Bituminous Macadam / Bituminous Concrete / Mastic Asphalt, etc., and any other mix required for the execution of the work; produced, supplied, delivered, placed on site, will be tested in Municipal Testing Laboratory (Minimum 80% tests) & Government / VJTI / SPCE / IIT laboratories (Maximum 20% tests) as per the requirement of relevant IS codes / Tender Conditions / SBD Conditions, and assure that it conforms to the quality norms mentioned therein.

Declare and Undertake that the above test results of the Ready Mix Concrete / Dry Lean Concrete / Granular Sub Base / Wet Mix Macadam / Dense Bituminous Macadam / Bituminous Concrete / Mastic Asphalt, etc., and any other mix required for the execution of the work; produced, supplied, delivered, placed on site will be submitted to Brihanmumbai municipal corporation periodically every month and whenever demanded.

Declare / Undertake that we undertake that the RMC Plant / Dry Lean Concrete / Hot Mix Plant / Crusher / WMM Plant ____ situated at ____ supplying Ready Mix Concrete / Granular Sub Base / Wet Mix Macadam / Dense Bituminous Macadam / Bituminous Concrete / Mastic Asphalt, etc., will be made available to inspection of appointed Quality Management Agency / Staff of BMC as and whenever required.

Declare and Undertake that the SCADA / VTS shall be kept in working condition and continuous link with the BMC portal is maintained as per the conditions mentioned in the registration / renewal of registration issued by Dy. Ch.E (Roads) Planning. The data of SCADA / VTS shall be preserved till completion of the work and produced to BMC Engineers as and when required and submitted along with the final bill records.

Declare and Undertake that we will confirm that the applicable royalties to be paid to the Government Authorities as per the policies in force are / will be paid and the requisite documents to that effect will be submitted to BMC whenever demanded.

Declare and Undertake and indemnify save and harmless the Brihanmumbai municipal corporation, its officers, servants and agents and the Municipal Commissioner from and against all actions, acts, costs, claims, damages, demands of any nature and kind whatsoever, which may be instituted claimed or made against the Brihanmumbai municipal corporation, its officers, servants and agents and the Municipal Commissioner by any person or persons, any third party or legal entity by reasons of the Brihanmumbai municipal corporation and / or the Municipal Commissioner.

Declare and Undertake that we undertake the full responsibility of the workmanship and quality / grade and quantity of the final finished product and to ensure this we are ready to deploy additional quality assurance staff from our side in addition to the staff mandated in the tender or deployed by BMC at its end.

Declare and Undertake that we irrevocably undertake the above mentioned responsibilities and the same will be binding upon us / Proprietor / Partner / Director/ Successors and assigns / Legal Heirs.

Declare and Undertake that if we fail to comply with the above or any of the test results fail w.r.t. the requirements of the various applicable codes / specifications, etc., BMC will be at a liberty to initiate action deemed fit as per various conditions of contract or standard bid document or penalty/ punishment / de-registration or any other action as deemed fit, against us.

Declare/Undertake that this Registered Irrevocable Undertaking (U/T) cum Declaration cum Indemnity bond is issued to bidder M/s _____ for work code _____.
Solemnly affirmed at

DEPONENT

**Proprietor / Partner
Contractual Agencies**

**Proprietor / Partner
RMC Plant / Hot Mix Plant /
Crusher / WMM Plant**

This day of _____ before me _____ Interpreted, Explained, Identified by me

< Note: Strike out the material for which this U/T is not being issued, Separate U/T to be issued for each plant and each work code. >

Annexure-H- LIST OF MACHINERIES

MINIMUM REQUIREMENT OF MACHINERY AS PER SIZE OF TENDER

Machinery and Equipment	Upto 20Cr	> 20Cr & upto 50Cr	> 50Cr & upto 100Cr	> 100 Cr & upto 150Cr	> 150 Cr & upto 200Cr	> 200Cr & upto 300Cr	> 300 Cr & upto 500 Cr	> 500 Cr & upto 1000Cr	> 1000 Cr
Vibratory roller(3T) (rolling width 1 mtrs)	1	1	1	2	2	2	4	5	10
Static roller (10T)	1	1	1	2	2	2	4	-	-
Vibratory Roller (Min 10T)	1	2	3	3	4	4	4	9	18
Dumpers of about 4CuM qty or	2	4	6	8	10	12	15	18	36
Dumpers of 8 CuM qty or more net in lieu of dumpers of 4 cum qty net	1	2	3	4	5	6	9	10	20
JCB	2	2	3	4	4	5	10	20	30
Poclairn	-	-	-	1	1	1	2	2	4
Thermostatic Road marker machine	1	1	1	1	1	1	2	3	6
Mobility Van	1	2	2	3	3	4	6	7	14
Specific capacity generator min 1Kva	1	1	1	2	2	4	5	6	12
Screed Vibrator (for Bids with C.C./TWT/CC passage roads)	1	2	2	4	4	6	7	15	30
Needle Vibrator (60 mm)	2	4	4	8	8	12	14	30	60
Needle Vibrator (40 mm)	2	4	4	6	6	8	10	15	30
plate vibrator (for Bids with	1	4	4	6	6	8	10	12	24

Machinery and Equipment	Upto 20Cr	> 20Cr & upto 50Cr	> 50Cr & upto 100Cr	> 100Cr & upto 150Cr	> 150Cr & upto 200Cr	> 200Cr & upto 300Cr	> 300Cr & upto 500Cr	> 500Cr & upto 1000Cr	> 1000Cr
C.C./TWT/CC passage roads)									
Joint cutting machine for cutting minimum 100mm depth with two spare blades (for Bids with C.C./TWT/CC passage roads)	1	2	2	4	4	6	9	15	30
M.S. Channel having height 300mm or as per C.C.bay - Set off 90 mtrs. in length of in proper shape, line and level with 2 double bulkheads (for Bids with C.C. roads)	2	3	4	5	6	8	10	30	60
M.S. Channel having height 150mm - Set off 90 mtrs. in length of in proper shape, line and level with 2 double bulkheads (for Bids with TWT/CC passage roads)	2	3	4	5	6	8	10	30	60
M.S. Channel having height 200mm - Set off 90 mtrs. in length of in proper shape, line and level with 2 double bulkheads (for Bids with	2	3	4	5	6	8	10	30	60

Machinery and Equipment	Upto 20Cr	> 20Cr & upto 50Cr	> 50Cr & upto 100Cr	> 100Cr & upto 150Cr	> 150Cr & upto 200Cr	> 200Cr & upto 300Cr	> 300Cr & upto 500Cr	> 500Cr & upto 1000Cr	> 1000Cr
C.C./ TWT/CC passage roads)									

Note:- Above are minimum requirement of machineries and equipment and Contractors will have to deploy additional machineries as and when required and as directed by Engineer-In-Charge. Bidder to note and comply with clause 2.5.

PROFORMAS:

PROFORMA- I

The list of similar works as stated in Clause '2.1' of Post qualification during last seven years--

PROFORMA- I					
Sr. No.	Name of the Project	Name of the employer	Stipulated date of completion	Actual date of completion	Actual Cost of work done
1	2	3	4	5	6

NOTE:

Legible Scanned Original copies of work completion / performance certificates from the Engineer-in-Charge for each work should be annexed in the support of information furnished in the above proforma failing which 10% EMD will be forfeited. Bidder shall present his original documents for checking to the Engineer in-charge of tender scrutiny as and when directed.

a. Works shall be grouped financial year-wise.

PROFORMA- II

Yearly turnover of Civil Engineering Construction Works during the last five years.

NOTE: The above figures shall tally with the audited balance sheets uploaded by the tenderers duly certified by Chartered Accountant.

PROFORMA- II					
Sr.No	Financial year	Annual Turno-ver of Civil Engineering	Updated value to current year	Average of last 5 years	Page No.
1					
2					
3					
4					
5					
Total					

PROFORMA- III

The list of similar works, as stated in Clause '2.1' of Post qualification.

PROFORMA- III							
Name of the Project	Name of the Employer	Cost of the Project	Date of issue of work Order	Stipulated Date of Completion	Actual Date of Completion	Actual cost of work done	Remarks explaining reasons for delay, if any
1	2	3	4	5	6	7	8

NOTE: Scans of original qualification certificates and details of work experience shall be submitted online/uploaded.

PERSONNEL PROFORMA- IV					
Sr. No.	Post	Name	Qualification	Work Experience	
				No. of years	Name of Projects
1.	Project Manager				
2.	Quality Control Engineer				
3.	Site Engineer				
4.	Site Supervisor				

Note: Scans of Original qualification certificates and original work experience certificate shall be submitted/uploaded.

MACHINERY: (for Original and New work only)

PROFORMA- V/A			
Sr.No.	Equipment	Number	Owned
1	2	3	4

Note: The tenderer(s) shall furnish/upload the requisite legible Scanned Original document of ownership of machineries. **The undertaking from the suppliers will not be accepted.**

PROFORMA - VI / A

Details of Existing Commitments and ongoing works -

PROFORMA - VI / A							
Description of work	Place	Contract No. & Date	Name & Address of employer	Value of Contract in Rs.	Scheduled date of completion	Value of work remaining to be completed	Anticipated Date of completion
1	2	3	4	5	6	7	8

Note: Legible Scanned Original copies of work orders & work performance certificates from the Engineer-in-Charge for each work should be annexed in the support of information furnished in the above proforma.

PROFORMA - VI / B

Details of works for which bids are already uploaded -

PROFORMA - VI / B						
Description of work	Place	Name & Addresses of employee	Value of Contract inRs.	Time Period	Date on which decision is expected	Remarks
1	2	3	4	5	6	7

PROFORMA - VII (Litigation History)

PROFORMA-VII (Litigation History)				
Other Party	Employer	Cause of Dis-pute	Amount In-volved	Remark Show-ing present sta-Tus
1	2	3	4	5

Note: Scanned Original of certificates from the Engineer-in-charge for each work shall be annexed.

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SECTION 16

CIRCULARS

(All the prevailing circulars of BMC till date are applicable to this tender even if not mentioned herewith, except those excluded otherwise)

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Please note that all the prevailing circulars/policies of BMC till date are applicable to this tender even if not mentioned herewith. The Bidder's attention is specially drawn to following circulars which shall be complied by the successful bidder and bidder must upload signed and stamped copy of the circular along with his bid submission as token of acceptance.

Sr. No.	Circular No.	Circular related to
1	CA_FRT_12 dated 21.06.2012	Labour Cess
2	CA_Finance_project_city_17 dated 06.09.2017	Anti-Profiteering, GST
3	MGC-F-6342 dated 05.05.2018	Barricading
4	DMC_CPD_3217 dated 02.03.2019	Grievance redressal Mechanism
5	Circular u/no. Dy.Ch.E./SWM/3957 dtd. 28.09.2018	SOP of construction & Demolition waste management Rules 2016
6	DMC_SWM_4677 dated 12.02.2019	Implementation of construction & Demolition waste management Rules 2016
7	CAF_03 dated 22.06.2021	Legal and stationery charges circular
8	AMC/ES/7725/II dtd.18.12.2014	Trench Policy guidelines
9	AMC/ES/9923/II dtd.20.07.2015	Trench Policy guidelines
10	Ch.E./1165/Rds/MC dtd 29.07.2016	Trench Policy guidelines
11	MGC/F/4255 dtd. 10.08.2017	Policy of Trenching ongoing project roads
12	ChE_637_SR_Roads and Tr dated 11.02.2020	Circular of penalty on trench contractor
13	ChE/160/SR/Rds & Tr. Dated 15.06.2021	Modifications/Amendments to certain provisions of guidelines for trenching activity 2015
14	Dir/ES&P/415/III dated 31.12.2019	Proposed Accidental compensation policy
15	MGC_F_8659 dated 07.09.2019	Modified Arbitration clause circular
16	CA/FBK/241 dtd. 27.11.2019	Approved list of banks

17	ChE-8412-Rds &Tr dt.02.02.2019	Guidelines for construction of Footpath
18	DyChE_8696_SWD_WS dated 16.07.2020	Standard SWD Drain sections
19	CA/FBK/303 Dt:17.03.2018	IDBI bank BG not Valid
20	DMC/Infra/1315 dated 25.06.2021	No FRP Cover Circular
21	CA(F)/Projects/25 dated 12.07.2022	Taxes
22	AMC/P/7909 dtd. 05.01.2022	Provision of Utility Duct
23	MGC/F/8659 dated 07.09.2017	Arbitration and Jurisdiction

Please Note: It shall be binding on successful bidder to also comply with all latest notifications pertaining to pollution such as but not limited to:-

THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000

The following circulars will not be applicable to this bid/contract:-

Sr. No.	Circular No.	Circular related to
1	Circular CAF_Project_21 dated 07.09.2020	revised RM, contract deposit, PG & ASD guidelines
2	CA(F)/Project/32 of 26.10.2020	Bid Security or EMD
3	CA(F)/Project/36 dtd 07.12.2020	Revised RM, Not to insist PG
4	CA(F)/Project/41 of 09.02.2021	Performance Guarantee (P.G)
5	CA(F)/Project/42 of 09.02.2021	Additional Security Deposit (A.S.D)