BRIHANMUMBAI MUNICIPAL CORPORATION

REQUEST FOR PROPOSAL (RFP)FOR

Selection of 'Project Management Consultant' for

Peer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)"

(Tender ID-2024_MCGM_986925_1)

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

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

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

Sd/-
EE(Roads)Z-IV

Sd/-

S.E.(Roads)P/North

Sd/-

S.E.(Roads)P/North

INDEX

SECTION-1

E-TENDER NOTICE

[REQUEST FOR PROPOSAL (RFP)]

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BRIHANMUMBAIMUNICIPALCORPORATION

No.Dy.ChE./14390 /Roads/WS dated 19.01.2024

E-TENDER NOTICE

Subject:	***REQUEST FOR PROPOSAL (RFP)For Selection of 'Project management Consultant' ForPeer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)"*** **(Tender ID-2024_MCGM_986925_1)**

The Brihanmumbai Municipal Corporation (BMC) invites online 'Request For Proposal' (RFP) e-tender to appoint Project Management Consultant for consultancy services for aforementioned work.

All interested bidders/consultants (excluding those who are blacklisted), whether already registered in BMC or not registered in BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process also with Mahatenders & obtain login Credentials to participate in the online bidding process. Bidding Process will comprise of THREE stages.

The tender document can be downloaded on payment of scrutiny fee of Rs.15,000 + applicable GST from e-procurement system of Government of Maharashtra Mahatenders website http://mahatenders.gov.in. Also the tender document can be viewed from BMC's portal (http://portal.mcgm.gov.in). The applicants not registered with BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process also with Mahatenders & 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. (Existing MCGM registered vendor is not required to re-register).

ii) Followed by Mahatenders login ID and password to be obtained from Mahatender potal http://mahatenders.gov.in

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

Name of work	Contract period	EMD in Rs.
REQUEST FOR PROPOSAL (RFP)For Selection of 'Project management Consultant' For Peer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)"	48 Months (Excluding Monsoon)	Lumpsum Rs.2,00,000/- (90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.

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.2,00,000/- (Rupees Two Lakh 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 document is available on BMC portal (http://portal.mcgm.gov.in) and is available on e-procurement system of Government of Maharashtra Mahatenders portal http://mahatenders.gov.in as mentioned in the Header Data of the tender. (90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.

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.) W.S. 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) as well as on http://mahatenders.gov.in

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

Officeof: Dy.Ch.E.(Roads) W.S.,

2nd & 3rd Floor, A Wing, Municipal Godown Building,

90 Feet Road, Sanskruti Complex, Kandivali (East),

Mumbai–400101.

(email id:-dychews01.roads@mcgm.gov.in)

(Tele Ph.No:022-20891350/20890553)

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 e-procurement system of Government of Maharashtra (Mahatenders) (http://mahatenders.gov.in) also the information regarding above subject matter is also available on BMC portal. (http://portal.mcgm.gov.in/tenders)

Sd/-

Dy.Ch.Eng (Rds)W.S.

HEADER DATA

Tender Document Number (Bid Number)	2024_MCGM_986925_1
Name of Organization	Brihanmumbai Municipal Corporation
Subject	*REQUEST FOR PROPOSAL (RFP)For Selection of 'Project management Consultant' ForPeer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)"*
Tender Scrutiny Fees	Rs.15000/- + 18% applicable GST (Scrutiny fees can be paid online or in Cash/DD by obtaining obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.
Bid Security Deposit /EMD	Rs.2,00,000/- (90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.
Date of issue and sale of tender	On 23.01.2024 (Tuesday)at 11:00 Hrs. onwards
Last date & time for sale of tender	On 30.01.2024 (Tuesday) upto 16:00 Hrs.
Submission of PacketA, B & Packet C (Online)	On 30.01.2024 (Tuesday) upto 16:00 Hrs.
Pre-Bid Meeting	N.A.
Opening of Packet A	On 31.01.2024 (Wednesday) after16:10 Hrs onwards
Opening of Packet B	On 31.01.2024 (Wednesday)after 16:20 Hrs onwards
Opening of Packet C	On 07.02.2024 (Wednesday) after11:00 Hrs onwards
Address for communication	Office of the Dy.Ch.E.(Roads) WS, A-wing, 2nd And 3rd Floor, Municipal Godown Building, 90' Road, Sanskruti Complex, Kandivali (E), Mumbai-400101 (email id:-dychews01.roads@mcgm.gov.in), Telephone No:-(022-20891350/20890553)

Venue for opening of bid	Online in Dy.Ch.E. (Roads) W.S. Office
Website	http://mahatenders.gov.in http://portal.mcgm.gov.in/tenders

The bidders are requested to note the following:

1) Consultants should quote the offer considering the scope of work on Lump-sum (LS) basis.
2) Evaluation of criteria of the tender will be the lowest financial offer offered by the consultant. However, in case of similar lowest financial offer, Technical Qualification criteria will be carried out as mentioned in the tender.
3) The time period is of 48 (Fourty Eight) months, excluding monsoon from the date of issue of Letter of Acceptance (LOA).
4) Consultants should specifically upload their residential address besides their official address along with telephone, mobile number, fax number & email facilities. The successful consultant will have to establish office in greater Mumbai and with telephone, fax facility. In this respect the Consultants having their offices at the outs curt of Mumbai is Thane Municipal Corporation Limit, Navi Mumbai Municipal Corporation Limit & Meera Bhayender Municipal Corporation limit can be considered and they will be given relaxation from the condition of setting up of the office in Mumbai. The consultant or their partners/ authorized representative shall be available on given telephone numbers. Any communication: sent on above said official address/telephone/email/fax shall be considered as sufficient communication to the consultants. The other consultants that are out of MMR regions shall submit an undertaking in Packet 'A' to the effect that, if recommended, they will establish office with telephone in Mumbal for any official communication within a period of 15 days of intimation, and maintain it till contract period is over.
5) This is three (3) packets tender. Packet 'A & B' will be considered as "Technical Bid" and packet 'C' will be considered as "Financial Bid".
6) The payment of lump sum EMD Rs. 2,00,000/- shall be done online only. 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.
(90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.
7) In case any difficulties faced while uploading data by the bidder in online process, bidder can contact on following Email id and telephone no.

IT help desk no. –022-24811275 / 290

E-mail id –mahatenders.it@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/-

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 online 'Request For Proposal' (RFP) e-tender to appoint Project Management Consultant for consultancy services for aforementioned work.

All interested bidders/consultants (excluding those who are blacklisted), whether already registered in BMC or not registered in BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process also with Mahatenders & obtain login Credentials to participate in the online bidding process.

Joint venture will not be allowed for this work. Similarly, sub-letting will not be allowed.

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 in BMC/Semi Govt./Govt. & Public Sector Organizations during last seven (7) financial years as a prime Consultant (or as a nominated sub-Consultant, where the sub consultant 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.'

To qualify for this contract, for which tenders are invited, the tenderer(s) must demonstrate and upload requisite documents for having experience and resources sufficient to meet the qualifying criteria.

(a) The Consultancy firm shall be in existence for at least 07 years.

(b) Minimum 07 years experience in consultancy services in Urban Transport Infrastructure Experience of road on stilt/bridge/tunnel/ elevated road of minimum 2 km, with lane configuration 2+2 or more (execution completed/substantially completed) with appropriate dispersal system, during last 07 years preceding the Proposal Due Date (PDD).

* **substantially completed" means, more than 80% of the execution is completed**.

(c) Experience of preparation of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit for work of road on stilt /bridge /tunnel/ elevated road of minimum 2 km, with lane configuration 2+2 or more.

Financial Year 2023-24 is treated as current year. 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. (i.e enhancement will be applicable for year FY 2022-23 completing on 31st March 2023 and previous years therein).

***In case of ongoing works to be considered, 80% of the work /works executed till last day of month previous to the one in which bids are invited.**

2.2 Similar Experience:

"The 'Similar Experience' shall mean:-

"The bidders should have carried out Feasibility Report, Draft Project Report (DPR), Design Estimates / Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit for work of road on stilt /bridge /tunnel/ elevated road of minimum 2 km,with lane configuration 2+2 or more with full carriageway width is developed.

Note : Certificate from concern Engineer-in-charge mentioning that, Road / Bridge / tunnel works carried out to its full width.

2.3 Financial Capacity

Achieved a average annual financial turnover as certified by 'CharteredAccountant' (in all classes of civil engineering construction consultancy works as stated in similar experience only) equal to Rs. 5.00 Crore 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 turn over can be enhanced by 10% every year to bring the present level

The firm shall have average financial turn over of Rs. 5 Crore in the last five financial years (2018-19 to 2022-23) and the bidder shall upload copies of financial documents (Audited balance sheets) for financial years (2018-19 to 2022-23).

2.4 Technical Personnel:

Note: Consultant(s) shall supply general information regarding the management structure of the firm, and shall make provision of suitably qualified personnel to fill the key positions as per the requirements specified as under.

The consultants shall supply and upload information of a prime candidate for each key position and each shall meet the requirements specified, as under–

Sr. No.	Key Personnel	Educational Qualifications	Nos.	Experience in Assignments
1	Sr. Bridge Engineer	Post Graduate in Civil Engineering	1	• 10 years of professional experience in road and bridge field. • Minimum 5 years of experience in similar capacity and involved for at least 5 years for Bridge/ Highway/ Road Development Projects.
2	Structural Design Engineer	Graduate in Civil Engineering with specialization in structural engineering.	1	• 10 years of professional experience in bridges. • Minimum 5 years of experience as a structural designer in bridge engineering field.
3	Geotechnical Engineer	Graduate in Civil Engineering	1	• 10 years of professional experience in geotechnical engineering in bridge/Highways engineering field.
4	Safety & Security Specialist	Graduate in Civil Engineering	1	• 10 years professional experience in safety & security of similar kind of at least 2 Highway projects of 2 km.

5	Contract Specialist	Graduate in Civil Engineering	1	Should have more than 10 years of advisory experience particularly in contracting, pricing and regulations and should have worked on at least 2 infrastructure* projects each costing not less than INR 100 Cr. *Infrastructure means – Roads and Bridges, Ports, Inland Waterways, Airport, Railway Track, Tunnels, Viaducts, Urban Public Transport (Except rolling stock in case of urban road transport).
6	Legal Expert	Graduate in Civil Engineering with specialization in Law/arbitration/Graduate in Law or equivalent	1	• 10 years of professional experience and should have worked as a legal expert for at least 3 (three)infrastructure projects.
7	Sr. Highway Engineer/ Transportation Planner	Graduate in Transportation Planner/Graduate in Civil Engineering with specialization in Highway Engineering.	1	• 10 years of professional experience in similar field. • Minimum of 5 years in Highway Planning & Designing works. • Should have handled at least 2 major four lane road projects. • Major bridge /flyover/elevated highway of length not less than 3km.
8	Environmental Expert	Graduate in Civil Engineering with specialization in Environmental engineering or Graduate in Environmental Science	1	• 10 years of professional experience. • Minimum of 2 years in Social Impact Assessment studies.
9	Team Leader	Post Graduate in Civil Engineering	1	• Min 10 years professional experience in design & construction of road /highways & Bridges.

10	Team Co-ordinator	Graduate in Civil Engineering	2	• Min 10 years professional experience in design & construction of road /highways & Bridges.
11	Quality Engineer	Graduate in Civil Engineering	3	• Min 10 years professional experience in design, construction & Material testing of roads/highways, bridges with min.5 years experience as quality control engineer.
12	Plant Engineer	Graduate in Civil Engineering	5	• Min 5 years professional experience in design, construction & Material testing of roads/highways, bridges
13	Site Engineer	Graduate/Diploma in Civil Engineering	12	• Min 5 years professional experience for graduate & min 10 years for diploma in civil Engg in design & construction of roads/highways, bridges

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.

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

Sr.No.	**Qualification**	**Experience(years)**	**Rate of Recovery**
1	Sr. Bridge Engineer	10	Rs.15000/-p.m.
2	Structural Design Engineer	10	Rs.15000/-p.m.
3	Geotechnical Engineer	10	Rs.10000/-p.m.
4	Safety & Security Specialist	10	Rs.10000/-p.m.
5	Contract Specialist	10	Rs.10000/-p.m.

6	Legal Expert	10	Rs.10000/-p.m.
7	Sr. Highway Engineer/ Transportation Planner	10	Rs.10000/-p.m.
8	Environmental Expert	10	Rs.10000/-p.m.
9	Team Leader	10	Rs.15000/-p.m.
10	Team Co-ordinator	10	Rs.10000/-p.m.
11	Quality Engineer	10	Rs.10000/-p.m.
12	Plant Engineer	5	Rs.10000/-p.m.
13	Site Engineer Degree Diploma	 10 5	Rs.10000/-p.m.

Please note:

[1]This condition do not relieve consultant 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 consultant is directed to provide technical staff in shifts. If it is found that consultant'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 Consultant wants to change the technical staff employed by him on site, he shall take prior approval of Zonal DyChE(Roads).

[4] **The consultant(s) should also furnish and upload general information regarding the Organizational set up of the firm.**

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 itsemployees 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 thise-tender. The assumptions, assessments, statements and information contained in this e-tender may not be complete, accurate, adequate or correct. Each Applicant should therefore, conductits 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 ofthis 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 how so ever 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 what so ever.

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 what so ever 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

1.1Background:

The Brihanmumbai Municipal Corporation covers an area of 437.71sq.kms.with apopulation 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 time and living conditions to match with the urbanization, BMC has mainly focused in providing almost all kindsof 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 Slaughter houses.

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., Octroi and 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 speed of 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 Water Drain /Roads and bridges and Building Construction etc.

Scope of Work Consists of "Peer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE / STEEL BRIDGE / TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P. ROAD)".

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SECTION-5

E-TENDERING ONLINE SUBMISSION PROCESS

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E-TENDERINGONLINESUBMISSIONPROCESS

The terminology of e-Tendering is solely depending upon policies in existence, guidelinesand methodology adopted since decades. The e-procurement system of Government of Maharashtra (Mahatenders) is only change in process of accepting and evaluation of tenders in addition to manual. Mahatender to be used in this E-tendering.

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 "Consultant/bidder"

Vendor read as "Consultant/bidder"

Vendor Quotation read as "Consultants Bid/Offer"

Purchaser read as "Department/BMC"

~~I. Before entering online tendering process, the consultants 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. Consultants already registered with BMC will approach to Vendor Transfer cell.~~

~~b. Submit his details such as (name, vendor code, address, registered Email ID, pancard 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 theVendor 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. CONSULTANTS BIDDING: Applicant will Quote and Upload Tender Documents

1. Accesseing tender link of SRM Portal

2. Login with User ID and Password

3. Selects desired Bid Invitation (he/she wants to bid)

4. To download tender documents consultants 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, Consultants can register his interest to participate. Without Registration, one can not 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. Consultants 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) consultants will quote considering the scope of work on Lump-sum basis.

10. Applicants to check the bid, digitally signs & save and submit his Bid Invitation.

11. Applicantscanalsosavehisuploadeddocuments/commercialinformationwithout SubmittingtheBIDforfutureeditingthrough'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.Ch.Eng.(Rds)W.S.**

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)

BARRING PHYSICAL SUBMISSION

As the entire tendering procedure is online process, the physical submission of documents shall not be entertained.

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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 inorder 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 **48 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 Consultant and shall be reckoned from the date as mention in the Work Order is given to the Consultant. The work shall through out 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 Consultant.

The Consultant should submit the bar chart 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 deem approved. The work should be completed as per approved bar chart.

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

The work comprising of "Peer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE / STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 MWIDTH) ALONG 36.60 M D.P. ROAD)" The factors influencing time period are:

1.The Contractor is already appointed for preparation of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, Experience of obtaining necessary permissions of forest/ Environment /wild life under acts as Wild Life Protection Act 1972, Forest Conservation Act 1980, Environment (protection) Act 1986 etc. for the said project.

2.The stretches of the proposed work are affected by slum pocket and forest land.

Considering above aspects, time period of **48 Months** (Excluding of monsoon) is proposed for the said tender.

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

6.2 Contract Execution

All required documents for execution of the contract shall be submitted with in 30 days from the date of issue of letter of acceptance. 2% contract deposit shall be submitted in the form of Demand Draft only and **shall be released** only after the completion ~~of Defect liability Period~~ of work or Final Bill, which ever is later. If the documents are not submitted within the stipulated time a penalty of Rs 5000/- per day will be applicable to the Consultant. 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 / Consultant already accepted shall be considered as cancelled and legal steps be taken against the Consultant for recovery of the amounts.

6.4 Action when whole of security deposit is forfeited:

In any case in which under any Clause of this contract, the Consultant 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 owning to serious illness or death of the Consultant 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 Consultant 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 Consultant 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 Consultant 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 Consultant.

(c) To order that the work of the Consultant be measured up and to take such part thereof as shall be un-executed out of his hands, and to give it to another Consultant 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 Consultant and the value of the work done or executed through the new Consultant shall be credited to the Consultant in all respects and in the same manner and at the same rates as if it had been carried out by the Consultant 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 doneby the new Consultant and as to the value of the work so done shall be final and conclusive against the consultant.

In case the contract shall be rescinded under Clause (a) above, the Consultant 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 Consultant and other allied expenses exceeding the value of such work credited to the consultant's amount of excess shall be deducted from any money due to the Consultant, by BMC under the Consultant otherwise, howsoever, or from his security deposit or the sale proceeds thereof provided, however, the Consultant shall have no claim against BMC even if the certified value of the work done departmentally or through a new Consultant 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 Consultant shall have no claim to compensation for any loss sustained by him by reason of his having purchase or procured any materials or entered into 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.

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

If the Consultant 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 Consultant 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 inwriting rescind the contract and the Security Deposit of the Consultant 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 6.4 hereof; and in addition the Consultant shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

6.6 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.
(90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.

b) Valid Registration Certificate.

c) Valid Bank Solvency Certificate of Rs. 50 Lacs

d) A document in support of Registration under Goods & Service Tax (GST).

e) Legible scan of original/notarized Xerox of 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.

g) The Registered power of attorney shall be submitted in the name of person who is submitting the bid.

h) The bidders shall categorically provide their Email-ID in packet'A'.

i) Consultants should specifically upload their residential address besides their official address along with telephone, mobile number, fax number & email facilities. The successful consultant will have to establish office in greater Mumbai and with telephone, fax facility. In this respect the Consultants having their offices at the outs curt of Mumbai is Thane Municipal Corporation Limit, Navi Mumbai Municipal Corporation Limit & Meera Bhayender Municipal Corporation limit can be considered and they will be given relaxation from the condition of setting up of the office in Mumbai. The consultant or their partners/ authorized representative shall be available on given telephone numbers. Any communication: sent on above said official address/telephone/email/fax shall be considered as sufficient communication to the consultants. The other consultants that are out of MMR regions shall submit an undertaking in Packet 'A' to the effect that, if recommended, they will establish office with telephone in Mumbal for any official communication within a period of 15 days of intimation, and maintain it till contract period is over.

NOTE:

i. If the tenderer(s) withdraw tender offer during the tender validity period, his entire E.M.D. shall be forfeited.

ii. Legible scan of original or Original Notarized document shall be uploaded, and they may be cross-checked against original during scrutiny as and wherever required. 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** failing which 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.

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 ACCURATEAND 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 if found uploaded even at any later stage the bidder will be disqualified and debarred from all bidding process for <u>two years.</u>**

B.<u>PACKET –B</u>

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 '2.2' of Post qualification successfully completed during the last seven years in prescribed proforma, in the role of prime Consultant. 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 '2.2'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 fivefinancial years (i.e 2022-23, 2021-22, 2020-21, 2019-20, 2018-19) & (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 INR 50 Lakh (Certificate from Bankers /C.A./ Financial Institution shall be accepted as an evidence)

d) The bidder shall give undertaking on Rs. 500/- stamp paper that it is his/their sole responsibility to arrange the required machineries either owned/on lease or hire basis, and will be available for timely use in the proposed contract.

[I] ForCement-ConcreteRoadWorks:-

ForC.CRoad/C.CPassage/TWT/UTWTworks,itismandatorythatbidders shouldsubmitinPacket-B,theRegisteredIrrevocableUndertaking(U/T)cum Declaration cum-Indemnity bond, in prescribed format annexed in the Annexure - G,with BMC registered RMC plant owner, regarding supply of materials as per BMCspecification.

[II] ForAsphalt/MasticRoadWorks

ForAsphalt/Masticasphaltroad/junctionworks,itismandatorythatbidder shouldsubmitinPacket-B,theRegisteredIrrevocable 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 havearrangement for Mastic asphalt production regarding supply of materials as per BMCspecificationforthatworkcode only.

Note:-

1)TheBiddershallallowBMCstaffaccesstohisplants,machineryforcheckingoftheirFunctioning&materialsusedformanufacturingandforqualitymanagementpurposesas andwhendirectedbytheEngineer-in-charge.

2) In case of otherwise eligible bidders who have not complied with the submission ofIrrevocableUndertaking cum Declaration cum Indemnity bond in Packet-B. (Non-submission of said Undertaking will not be considered as a **Shortfall)** and they **all willbe 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 defectandthebiddersEMDwillbeforfeited.**

Note: If L-1bidderfailstocomplywiththesubmissionofthesaidIrrevocableUndertaking cum Declaration cum Indemnity bond with plant owners then in that casesubmission of the undertaking complied by the next successive eligible bidders within therequisitetimei.e.7dayswillbetakenintotheconsideration.

Thereafter, negotiations will be done with the said successive / responsive bidder withrespecttohisquotedrate.

Note: Fore.g.ifL-1,L-2,L-3failstosubmitsaidRegisteredIrrevocableUndertaking cum Declaration cum Indemnity bond and if L-4 have submitted thesaid Undertaking

~~**then he will be called for the negotiation with respect to hisquoted rates.**~~

e) 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% of EMD will be forfeited.**

f) 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.

~~g) Statement showing assessed available Bid Capacity.~~

h) The undertakings of Rs.500/- stamp paper as per the proforma annexed in 'Annexure B & C '**each separately**.

i) AnnexureE, AnnexureF ~~& 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**.

j) Annexure A and Form of tender shall be submitted on bidder's letter head.

k) 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 with in prescribed time period, considering major activities.
2. Organizational set up envisaged by the consultants.
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.

l) The tenderer shall submit the signed copies of all addendums & corrigendum's.

m) 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 ofthe 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.** TheElectrical/MechanicalworkshallbegotcarriedoutbythecivilcontractorsthroughthecontractorsregisteredwithBMCinElectricalCategory.Informationabout 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 validregistrationcertificate in Electrical Category shall be uploaded with the tenderalong with the undertaking from the registered Electrical Contractor stating hiswillingness to carryout thetender 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 bidderhas 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/44of04.01.2013.

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.

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 bidwill 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.

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 iffound uploaded even any later stage bidder will be disqualified and debarred from all bidding process for two years.**

C.PACKET–C

a. The bidder shall quote Online tender taking into account scope of work on Lumpsum basis.

In case of more than one similar lowest offers received or "Tie", technical aspects will be taken into consideration for selection of bidder.

~~**Note:Incaseofrebate/premiumof15%andaboveasquotedbythetenderer,the rate analysis of major items covering 90 % of the estimated cost of the bid shallbesubmittedbyL1and L2bidderafterdemandnotificationbye-mailtobiddersby concerned Dy.Ch.Eng. A sample format for rate analysis is annexed atAnnexure D. Also, summary sheet of the all cost incurred for bidder as per rateanalysisofitemscovering90%oftheestimatedcosthastobesubmitted.**~~

~~**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 tosubmitrateanalysis,failingwhichEMDwillbeforfeited,andthebidwillberejected, and next successful bidder will be considered. Thereafter, negotiationswill be done with the said successive / responsive bidder with respect to hisquotedrate.BiddertonotethatcorrectASDneedstobepaidasmentionedinclauseno.6.10D.**~~

6.7 BID SECURITY OR EMD

6.7.1 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.

6.7.2 The tenderers shall pay the EMD online instead paying the EMD at any of the CFC centers in BMC Ward Offices.

6.7.3 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.

6.7.4 The Bid Security/EMD of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposits.

6.7.5 The Bid Security/EMD of L-3 and bidder shall be refunded immediately after opening of financial bid but, the EMD/~~ASD~~ submitted by the L-2 bidder will be returned after obtaining Standing Committee Resolution.

6.7.6 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.

6.7.7 After the finalization of the successful lowest bidder for the work, EMD of the other bidders shall be released within 30 days, on merits.

6.7.8 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.

6.7.9 EMD online at the time of bidding and the submission will be insisted as per SBD conditions. (90% EMD to be paid online and 10% EMD to be paid physically in the form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. Office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A & B.

6.7.10 All other deposits will have to be deposited in the form of Demand Draft (**D.D.**) Only, as per prevailing SBD conditions.

6.7.11 **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 consultant, 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 24 Months are re-ported, 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. RateAnalysisinprescribedformatshallbesubmittedonline(within3workingdays)fromthedateo fcommunicationonemailtosubmitrateanalysis,failingwhichEMDwillbeforfeited, and the bid will be rejected, and next successful bidder will be considered.Thereafter, negotiations will be done with the said successive / responsive bidder withrespecttohisquotedrate.**~~

~~**6. In caseof non-workablerateanalysis and misleadinginformation submittedbythebidder,EMDshallbe forfeited,andbidwillberejected.**~~

Note:

I. <u>Curable Defect shall mean shortfalls in submission such as:</u>

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.

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

II. <u>Non-curable Defect shall mean</u>

a. In adequate 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. 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 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 and other documents, etc.

~~**e. Inadequate submission of ASD amount.**~~

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.

6.8 <u>BID VALIDITY</u>

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.

6.9 SECURITY DEPOSIT, ~~PERFOMANCE 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**–

The successful tender, here after referred to as the consultant 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-Applicable

The consultant shall pay the retention money an amount equal to five (5) percent of the Contract Sum which will be recovered from the consultants every bill i.e. interim / running / final bill.

~~B. AdditionalSecurityDeposit~~

~~ASD shall be submitted in form of Demand draft on the day before opening of Packet-C to the Head clerk (Expenditure) in the office of Dy Chief Engineer (Roads), W.S in sealed envelope during working hours up to 4 pm only . If ASD is not applicable to the bid, then bidder should submit envelope containing note "ASD not applicable" Submission of sealed envelope is compulsory. ASD shall be applicable as under:~~

~~The ASD shall be paid is applicable as under:~~

~~Sr. No.~~	**~~Rebate quoted by contractor~~**	**~~ASD applicable~~**
~~1~~	~~Upto12%rebate~~	~~NoASD~~
~~2~~	~~12.01%to20%rebate~~	~~1% of Estimated Cost for each percentage & partthereof above12%rebate~~
~~Sr. No.~~	**~~Rebatequoted bycontractor~~**	**~~ASDapplicable~~**
~~3~~	~~20.01%rebateandabove~~	~~8% of estimated cost + (2% of estimated cost extraforeachpercentageandpartthereofover and above20%rebate)~~

~~ForExamplefor 100Croreswork~~

~~[A] Ifbidderquotes12.06%belowthenASDwillbeassunder~~

~~(i) %quotedbelow12%=0.06%~~
~~(ii) 0.06%x100=6Lakhs~~

~~[B] IfBidderquotes15.30%belowthenASDwillbeassunder~~
~~(i) %quotedbelow12%=3.30%~~
~~(ii)3.30%x100=3.3Crores~~

~~[C] IfBidderquotes22.60%belowthenASDwillbeassunder~~
~~(i) %quotedbelow12%andupto20%=8%(ii)%quotedbelow20%=2.60%~~
~~(iii)8x100+2x2.6%x100=13.20Crores~~

~~**If the bidders fails to submit the sealed envelope as mentioned above at least oneday beforeopening of'Packet C' withinofficehours then the E.M.D.of therespectivebidderswillbeforfeitedandthecompanywiththeirDirectors /Partnersandothercompanieswiththesaid Directors/Partnerswillbefurther debarredfromanytenderingprocessfortheperiodofatleast2years.**~~

C. ~~Performance Guarantee Deleted~~

Note:

1. **Contract sum shall mean amount ~~afterapplicationofrebate/premium~~ as quoted by the consultant ~~with contingencies only and excluding price variation~~.**

~~**2. DELETED**~~

~~**3. DELETED**~~

~~**4. DELETED**~~

~~**5. DELETED**~~

~~**D. DeferredPayment**~~

~~Payment of bill will be under 80:20 deferred payment scheme, i.e 80% amount ofthe certified bill will be released immediately, 20% amount will kept in depositand releasedasunder~~~~:~~

~~1. Final bill shall be submitted by the Bidder within one year from the start of DLP ofthatrespectiveroad,failingwhichapenaltyofRs.1,00,000/- willbedeductedfrom thebalancepaymentofcontractorperyeartillthesubmissionoftheFinalBill.~~
~~e.g(i)ifbillissubmittedanytimeafter24Monthsupto24monthsthenRs1,00,000/- will bedeductedaspenalty.~~
~~(ii)ifbillissubmittedanytimeafter24monthsto36monthsthenRs2,00,000/- will bedeductedaspenalty.~~
~~(iii) ifbillissubmittedanytimeafter36monthsto48monthsthenRs3,00,000/- will be deducted as penalty and so on till submission of Final bill with allrecords.~~

~~IfFinalbillissubmitted,then -~~

~~b.~~ **~~For C.C Roads with 10 years DLP~~**~~:-~~

~~20%withheldamountwillbereleasedasunder:-~~

~~4%willbereleasedeachyearfromthecompletionof6thyearoftheDLPtill thecompletion ofDLPorafterFinalBillwhicheveris later.~~

~~Note:- ItismandatorytocarryourRoughnessIndex(R.I.)onceaftercompletionoftheworkandthereaftereveryyearfromthestartof6thyeartillthecompletionoftheDLP.~~

~~c. ForC.CPassage/Roads&JunctionsinMasticandotherroadswith5years DLP~~

~~i)20%withheldamountwillbereleasedasunder:-~~

~~For5yearsDLPRoads6%paymentwillbereleasedeachyear oncompletionof3rdand4thyearsofDLPand8%willbereleasedonthecompletionof5thyearofDLPorafterFinalBillwhicheveris later.~~

~~Note:-ItismandatorytocarryourRoughnessIndex(R.I.)onceaftercompletion of the work and thereafter every year from the start of 3rd yeartillthecompletionoftheDLP.~~

~~d. ForRoadsinAsphaltmix andotherroadswith3 yearsDLP~~

~~i) 20%withheldamountwillbereleasedasunder:-~~

~~For 3 years DLP Roads 10 % payment will be released each year on completion of2nd and 3rdyearsof DLPorafterFinalBillwhicheveris later.~~

~~Note:ItismandatorytocarryourRoughnessIndex(R.I.)onceaftercompletionofthe workandthereaftereveryyearfromthestartof1styeartillthecompletion ofthe DLP.~~

~~2. Since, 80:20 deferredpayment schemeis implemented, retention money will notbedeductedfromtherunning bill.~~

~~3. The 20% deferred payment shall not be released against Bank guarantee (B.G) atanystageofcontract.~~

E. Refund of Security Deposit:-

I. Refund of Contract Deposit

The 2% contract deposit shall be released only after the completion ~~of Defect liability Period~~ of work or Final Bill, which ever 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 Consultant. ~~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 [Applicable]-After completion of Work/DLP

One-half (50%) of the 5% Retention Money 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 Consultant.

The balance Retention Money shall be released within 30 days after completion DLP (i.e. 10 years) and after issue of 'Defect Liability Certificate' provided that the Engineer is satisfied that there is no demand outstanding against the Consultant. In the event of different Defects LiabilityPeriods have been specified or become applicable to different sections or parts of the Permanent Works, the said moneys will be released within 30 days on expiration of the latest of such Defects Liability Periods.

Payment of the above mentioned 50% is exclusive of the amounts to be withheld as stated in and that amount shall be paid as per condition stated therein.

~~**Since, 80:20 deferred payment scheme is implemented, retention money will not be deducted from the runningbill.**~~

~~**III. RefundofAdditionalSecurityDeposit**~~

~~The additional security deposit shall be released within 30 days of issue of 'Certificateof Completion' with respect to the whole of the Works. In the event the Engineerissues a Taking-overCertificate for a section or part of the Permanent Works, onlysuch proposition thereof as the Engineer determines (having regard to the relativevalue of such section or part of the Works) shall be considered by the Engineer forpaymenttotheContractor.~~

~~Contract deposit, ASD, Performance Guarantee (P.G) and any other deposits willneitherbeacceptedinBankGuarantee(B.G)norwillbereleasedagainstB.G.~~

IV.~~**Refund of Performance Guarantee DELETED**~~

❖ **Time of Refund** ~~**for works having 10 years DLP….**~~

❖ **Contract Deposit- After completion of work or final bill whichever is later.**

❖ **Retention money- After completion of work/DLP, as per above clause 6.9 E (II).**

~~**Deposits refunded After completion**~~	~~**After 5 years of DLP**~~	~~**After completion of DLP**~~
~~**ASD**~~	~~**CD**~~	~~**P.G.**~~

~~❖ **Time of Refund for works having 5 years DLP**~~

~~**Deposits refunded**~~	~~**After 3 years of DLP**~~	~~**After completion of DLP**~~
~~**After completion**~~		
~~**ASD**~~	~~**CD**~~	~~**PG**~~

~~❖ **Time of Refund for works having 1or 2 or3 years DLP**~~

~~**Deposits refunded after completion**~~	~~**After Completion of DLP**~~

~~ASD~~	~~CD+PG~~

~~**IV. Refund of Deferred Payment**~~

~~Paymentofbillwillbeunder80:20deferredpaymentscheme,i.e80%amountofthecertified bill will be released immediately, 20% amount will kept in deposit andreleasedasmentionedaboveinclause6.10D.~~

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

Successful tenderer shall pay the Legal Charges +Stationary charges as per Legal departments Circular no. 010539 dated 28.03.2023.

Contract Value						Legal+Stationery Charges
from	Rs.	10,001/-	To	Rs.	50,000/-	Nil
from	Rs.	50,001/-	To	Rs.	1,00,000/-	Rs.6920/-
from	Rs.	1,00,001/-	To	Rs.	3,00,000/-	Rs.11,420/-
from	Rs.	3,00,001/-	To	Rs.	5,00,000/-	Rs.13,720/-
from	Rs.	5,00,001/-	To	Rs.	10,00,000/-	Rs.15,970/-
from	Rs.	10,00,001/-	To	Rs.	20,00,000/-	Rs.18,230/-
from	Rs.	20,00,001/-	To	Rs.	40,00,000/-	Rs.20,530/-
from	Rs.	40,00,001/-	To	Rs.	1,00,00,000/-	Rs.22,800/-
from	Rs.	1,00,00,001/-	To	Rs.	10,00,00,000/-	Rs.26,900/-
from	Rs.	10,00,00,001/-	To	Rs.	20,00,00,000/-	Rs.31,050/-
from	Rs.	20,00,00,001/-	To	Rs.	30,00,00,000/-	Rs.35,180/-
from	Rs.	30,00,00,001/-	To	Rs.	40,00,00,000/-	Rs.39,320/-
from	Rs.	40,00,00,001/-	To	Rs.	50,00,00,000/-	Rs.43,420/-
from	Rs.	50,00,00,001/-	To	Rs.	1,00,00,00,000/-	Rs.51,700/-
from	Rs.	1,00,00,00,001/-	To	Rs.	2,00,00,00,000/-	Rs.64,100/-
from	Rs.	2,00,00,00,001/-	To	Rs.	3,00,00,00,000/-	Rs.72,350/-
from	Rs.	3,00,00,00,001/-	To	Rs.	4,00,00,00,000/-	Rs.82,640/-
from	Rs.	4,00,00,00,001/-	To	Rs.	5,00,00,00,000/-	Rs.92,970/-
from	Rs.	5,00,00,00,001/-	To	Rs.	Anyhigheramount	Rs.103,320/-

The tenderers are requested to note that stationary charges as given in the table above will berecovered from the successful tenderer for supply of requisite prescribed forms for

preparing certificate bills in respect of the work.

6.10 Stamp Duty: (As per applicable circular)

It shall be incumbent on the successful tenderer to pay stamp duty on the contract.

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 labouror 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 setforth 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 BMC 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 consultants and to deposit the deficit or unpaid Stamp Dutyand 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 of0.5%ispayableontotalamountofBankGuaranteesubmittedbyTenderer.Ifthetimeperiod of the Bank Guarantee is required to be extended then the same shall beconsidered as new Bank Guarantee and 0.5% stamp duty shall be applicable for thesame~~.

6.11IMPORTANT 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@mcgm.gov.in. " REQUEST FOR PROPOSAL (RFP)For Selection of 'Project management Consultant' For Peer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)". 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 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 quote of lowest bidders is obtained, technical aspects will be taken into consideration for selection of bidder.

~~Thebiddershallneedtosubmittheadditional ASD if applicable within 7 days after receipt of notification issued by concerned Chief Engineer.~~

~~4. The Vigilance department will carry out therandomsiteinspectionsofroadworkasperthe prevailing guidelines and modalities of Vigilance department issued u./no. ChE/Vig 3170/B dated 21.09.2016 and ChE/Vig/1490/B dated 02.08.2018.~~

6.12 Net Worth:-

The bidders shall have positive net worth and should be profitable as on 31.03.2023. 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 INR 50 Lakh (Certificate from Bankers / C.A./Financial Institution shall be submitted as an evidence).

6.13 Cost of Proposal:-

The consultant(s) shall bear all costs associated with the preparation and submission & uploading of his proposal, and the Employer will in no case be responsible and liable for such costs.

6.14 Taxes:

As per circular CA/F/Project/28 Dt.28.03.2023, The tenderer shall quote inclusive of all taxes other than GST (Excluding GST), levies, duties, cess etc. as applicable at the time of bid submission. GST as applicable shall be paid separately on submission of bills/invoice. Input tax, credit of GST as available with the bidder will not be claimed separately by BMC. However, while quoting the rates benefit of input tax, credit or exemptions shall be passed on to the BMC by way of equivqlent reduction in quoted price.

6.15 Evaluation of Proposals:

The proposals will be evaluated on the basis of information submitted by the bidders in the proposal. The bidder shall quote Online tender taking into account scope of work on Lumpsum basis.

In comparing proposals, efficiency and reliability of consultant(s) and the eligibility criteria mentioned in the proposal document shall be considered. The decision of the award of contract would be as under-

a) The financial offers i.e. Packet 'C', of the successful consultants in Packet A & B, shall be opened in the presence of authorized representative of consultants who choose to attend. In case of similar lowest offers received or "tie" between more than one bidder, then evaluation will be done on technical basis as below:

The weights given to Technical (T)

Formula for determining the technical score:

On the basis of combined weightage score of quality and cost, Bidder shall be ranked in terms of the total score obtained. The proposal obtaining the highest total combined score in evaluation of quality and cost will be ranked as H-1 followed by the proposal securing lesser marks as H-2, H-3 etc. The proposal securing the highest combined marks and ranked H-1 shall be recommended for award of contract.

As an example, the following procedure can be followed.

In a particular case of selection of Bidder, it was decided to have minimum qualifying marks for technical qualification marks as 75 and weightage of technical bids and financial bids was kept as 80:20. In response to the bid, three proposals, A, B and C were

received. The technical evaluation committee awarded them 75, 80 and 90 marks respectively. The minimum qualifying marks were 75. All the three proposal were, therefore, technically suitable and their financial proposals were opened after notifying the dates and the time of bid opening to the successful participant. The price evaluation committee examined the financial proposals and evaluated the bid prices as under.

In case of Tie up -

Proposal Evaluated Bid price

A	Rs.100
B	Rs.100
C	Rs.100

Using the formula **P=LEC/ EC *100**, where LEC stands for Lowest Evaluated Cost and EC stands for Evaluated Cost, the committee gives them the following points for financial proposals:

A : (100 / 100)*100 = 100 points

B : (100 / 100)*100 = 100 points

C : (100 / 100)*100 = 100 points

In the combined evaluation, thereafter, the evaluation committee calculated the combined technical and financial score as under:

Proposal A: 75x0.80 + 100x0.20 = 80 points

Proposal B: 80x0.80 + 100x0.20 = 84 points

Proposal C: 90x0.80 + 100x0.20 = 92 points

The three proposals in the combined technical and financial evaluation were ranked as under:

Proposal A	: 80 points	:H3
Proposal B	: 84 points	:H2
Proposal C	: 92 points	: H1

In above "Tie" situation of financial offer, taking in to account technical aspects, Proposal C was, therefore, declared as winner and recommended for approval, to the competent authority.

If the bid of the successful Bidder is seriously unbalanced in relation to the Engineers estimate of cost of work to be performed under the contract, the Engineer may require the Bidder to produce detailed price analysis for any or all items of bill of quantities to demonstrate the internal consistency of those prices with the approach and methodology and manpower requirement and the work schedule proposed.

However, such information will not have any bearing in valuation of any variations or any claims during execution of the works. After evaluation of the price analysis, the Engineer may require that the amount

of the security deposit be increased at the expense of successful Bidder to the extent of imbalance to protect the Engineer against financial loss in the event of default of the successful Bidder under the contract.

Table A: Overall Marking Criteria:

Item	Description	Maximum Marks
A	**Technical Evaluation**	
A1 A1.1 A1.2 A1.3	Experience of similar projects involving consultancy services in urban transport infrastructure[1], ~~underground~~ road /metro / railways of minimum 7 km severally and experience of road on stilt/bridge/elevated road/tunnel of minimum 5 km, with lane configuration 2+2 or more(execution completed/substantially completed[2]) with appropriate dispersal system, during last 10 years preceding the Proposal Due Date. "1" The Consultant should have provided the consultancy services for transport infrastructure projects during the last 10 years preceding the Proposal Due Date. "2" "substantially completed" means, more than 80% of the execution is completed with National International experience of 1 Country ~~(Excluding India).~~	50
A2	Qualification and Experience of the Key Persons as per table C below	40
A3	Adequacy of the proposed work plan and Planned out methodology as per Table D below.	10
	Total of "A"	**100**
B	**Financial Evaluation**	**100 Marks**
C	**Final Score (A*0.8) + (B*0.2)**	

Table B: Experience of similar projects involving consultancy services in urban transport infrastructure, and experience of road on stilt/bridge/elevated road /tunnel of minimum 5 km, with lane configuration 2+2.

Sr No	Bidders capabilities	Parameter	Criteria	Marks	Max marks
A. Financial Capabilities					

1	Average Turnover of Consultancy Firm	5 Crore and above	Minimum Rs 5 Cr.	**10**	**10**
B. Particular Experience					
2. a)	**Technical Capabilities** A-1 The Consultancy firm must have carried out as a single entity OR as partner the work of Designs and Detailed Engineering for at least one project involving consultancy services in urban transport infrastructure* in last 10 years.	*Infrastructure means – Roads and Bridges, Ports, Inland Waterways, Airport, Railway Track, Tunnels, Viaducts, Urban Public Transport (Except rolling stock in case of urban road transport). a) As a individual		**8**	**10**
		b) As a partnership firm		**10**	
	A-1.1 Should have carried out as a single entity OR as a joint venture partner the work of Designs and Detailed Engineering for road on stilt, bridge and elevated road.	Road on stilt, bridge and elevated road/tunnel of minimum 5 km, with lane configuration 2+2 or more (execution completed/substantially completed[2)with] appropriate dispersal system, during last 10 years preceding the Proposal Due Date.		10	10

	A-1.2 Should have carried out as a single entity OR as a partner the work of Designs and Detailed Engineering for ~~underground~~ road/ metro /railways / tunnelling of minimum 7 km severally. (Furnish copy performance certificate issued by the Owner /Employer not below the rank of Executive engineer)	As a individual	**10**	**10**
		As a partnership firm	**7**	
2b)	A-1.3 Permanent key staff for 2 years ~~as stated at 10.3 of ITB~~ with supporting documents of PF & TDS deduction.	Having 50% or more permanent staff	**10**	**10**
		Having less than 50% permanent staff	**5**	
Total				**50**

A2: Key Persons as specified –

Table - C

Sr.No	Position	Total Marks
1	Sr. Bridge Engineer	**4**
2	Structural Design Engineer	**4**
3	Geotechnical Engineer	**3**
4	Safety & Security Specialist	**2**
5	Contract Specialist	**2**
6	Legal Expert	**2**
7	Sr. Highway Engineer/ Transportation Planner	**3**
8	Environmental Expert	**2**
9	Team Leader (1 no)	**5**
10	Team Co-ordinator (2 no)	**2**

11	Quality Engineer (3 no)	**3**
12	Plant Engineer (5 no)	**2**
13	Site Engineer (12 no) Degree/Diploma	**6**
Total		**40**

Criteria for marking professional staff

Sr. No	Description	Percentage
1	Academic qualifications	**25**
2	Experience: Level & duration of relevant experience	**40**
3	Adequacy for the assignment	**35**
Total		**100**

Note- All above Key Personnel shall be conversant with English language.

A3: Adequacy of the proposed work plan and Planned out methodology.

Table - D

Sr. No	Description	Marks
D	Adequacy of the proposed work plan and planned out methodology	**10**

d. Consultants are advised to ensure reasonableness and adequacy of their financial proposal.

e. Please note that MCGM is not bound to select any of the firms submitting the proposals.

f. Out of the total applicants/bidders who qualify in Technical Evaluation, the bidders who match the lowest financial offer the evaluation will be carried out as above.

g. The Earnest Money Deposit of other consultants shall be refunded after the successful consultants has signed the Agreement & furnished the required Contract Deposit and all necessary documents.

6.16 AWARD OF CONTRACT:

a.Award Criteria-

Notification of award will be issued in writing to successful Consultants. The contract will be awarded to the highest evaluated responsive Consultants in conformity with the proposal from amongst the

eligible responsive bidders, who have quoted the lowest rate.

b.The bidders quoting the similar lowest rates, the evaluation will be carried out on financial as well as technical aspects.

Prior to the expiry of the validity of the proposal, the Corporation will notify the successful consultant(s) by letter that his proposal has been accepted. This letter herein after and in condition of contract is called "The Letter of the Acceptance". Notification of Award will constitute the formation of Contract.

Corporation reserves its right to accept/reject any or all proposals and to annul the process of proposals at any time prior to award of contract, without there by incurring any liability to the affected consultant(s) or any obligation to inform the affected consultant(s) of the grounds for this action.

c.Signing of the Contract/Agreement-

Within 30 days of receipt of the LOA, the successful consultant shall furnish a Contract deposit amounting to 2% of contract cost or as informed by the Dy.Ch.E.(Roads) W.S. as mentioned in the work order, in form of D.D. and sign the form of Agreement along with all documents required for execution of contract. The contract agreement shall be adjudicated for payment of stamp duty by the successful bidder as per clause 6.10. Penalty of Rs.5000/- per day will be recovered till signing of agreement, after lapse of stipulated time period or at the discretion of the Engineer in charge. Incase Tenderer fails to sign the agreement within 30 days of being asked to do so, then EMD shall be forfeited. List of approved Banks is appended at the end of EOI document.

It will be obligatory on the part of successful consultant to get registered as BMC's vendor by paying necessary fees to BMC by following due procedure. The payment will be made through E.C.S.

d.Payments and release of Retention Money & Contract Deposit-

It will be obligatory on the part of successful consultant to get registered as B.M.C's vendor by paying necessary fees to B.M.C. by following due procedure. The payment will be made through E.C.S./RTGS.

The bills will be certified & released after verification. Retention money amounting to 5% of running bill shall be deducted from running bills.

Contract Deposit will be released after ~~expiry of contract period~~ completion of work or Final bill whichever is later and Retention money will be released after completion of work.

The consultant shall submit the bill for the work carried out, within 15 days from the date of completion of the work along with all requisite reports. If the consultant fails to submit the bill for the completed work / running bill within15days, penalty or action as shown

below will be taken for each delayed bill :-

1	After 15 days from the date of completion/running bill up to certain date, up to next 15days i.e.upto 30days.	Equal to 5% of bill amount.
2	After 15 days from the date of completion /running bill upto certain date, up to next15 Days i.e. up to 30 days.	Equal to 10% of bill amount.
3	Next 15 days up to 45 days from the date of completion/running bill up to specified date	Bill will not be admitted for Payment.

6.17 Termination of Project Management Consultant (PMC):

If the Project Management Consultanat (PMC) is found not functioning upto the satisfaction of the Deputy Chief Engineer (Roads) W.S., then same will be reported to Chief Engineer (Roads & Traffic) and immediately appropriate decision will be taken regarding termination of that agency by Chief engineer (Roads & Traffic) following due process.

~~RateAnalysis:~~

~~1) Rates shall be quoted in the preseribed 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, quantityor any other changes of the rate analysis allowed.Rate Analysis in prescribed format shall besubmitted online (within 3 working days) from the date of communication on email to submit rateanalysis,failingwhich10%EMDwillbeforfeited.Guidelinesforthesameshallbeintimatedtothe L1 andL2biddersthrougheMailatthe timeofdemandingRateAnalysis.~~

~~2) OverheadsandProfitpercentageshallbeaspercontractorsworking~~

~~3) Bidder/sshallsubmitbasiccurrentmarketrateofindividualitemslikecement,Coarseaggregate, fineaggregate,Torsteel,mildsteel,Bitumen,Bricks,etc.(includedinBOQ)separately.~~

~~4) DescriptionusedinprevailingUSoRforparticularitemshallbeusedasitis,whilesubmittingRateAnalysisonline.Incase ofanydiscrepancybiddermay approachtoengineerincharge forformatsofrateanalysis,unit, quantitymentioned herein.decisionofEngineerinchargewillbebindingonbidder~~

~~**5) Ifthequantitiesinaboveformat/sequencearechangedorifanydiscrepanciesarefound,therateanalysissubmittedbybidder/swillbetreatedasnon-workableandfurtheractionasperthisbid document shallbe initiated.**~~

~~6) Bidder/sshallsubmitquotation/consentfromthereputed/registeredsupplier's/manufacturers ofvariousmaterialsalongwiththeaddress,GSTregistrationcertificateandemail idofsupplier/s.~~

~~7) Bidder/sshallsubmittheGSTCertificateofthesupplier/sofvariousmaterial.~~

6.18 As per circular No. CA(F)/FRT/31 dated 29.11.2017 regarding Exemption from GST for pure service provided to Municipal Corporation of Greater Mumbai by way of any activity in relation to any function entrusted under Article 243W of the Constitution of India.

6.19 Grievance Redressal Mechanism:

BMC has formed a Grievance Redressal Mechanism for redressal of bidder's grievances.

Any Bidder or prospective Bidder aggrieved by any decision, action or omission of the procuring entity being contrary to the provisions of the tender or any rules or guidelines issued therein. in Packet 'A', 'B' & 'C' can make an application for review of decision of responsiveness in Packet 'A', 'B' & 'C' within a period of 7 days or any such other period, as may be specified in the Bid document.

While making such an application to procuring entity for review, aggrieved bidders or prospective bidders shall clearly specify the ground or grounds in respect of which he feels aggrieved.

Provided that after declaration of a bidder as a successful in Packet "A" (General Requirements), an application for review may be filed only by a bidder who has participated in procurement proceedings and after declaration of successful bidder in Picket B (Technical Bid), an application for review may be filed only by successful bidders of Packet A. Provided further that, an application for review of the financial bid can be submitted, by the bidder whose technical bid is found to be acceptable/responsive.

Upon receipt of such application for review, BMC may decide whether the bid process is required to be suspended pending disposal of such review. The BMC after examining the application and the documents available to him, give such relief's, as may be considered appropriate and communicate its decision to the Applicant and if required to other bidders or prospective bidders, as the case may be.

BMC shall deal and dispose off such application as expeditiously as possible and in any case within 10 days from the date of receipt of such application or such other penod as may be specified in pre-qualification document, bidder registration document or bid documents, as the case may be.

Where BMC fails to dispose off the application within the specified period or if the bidder or prospective bidder feels aggrieved by the decision of the procuring entity, such bidder or prospective bidder may file an application for redressal before the "Internal Procurement Redressal Committee" within 7 days of the expiry of the allowed time or of the date of receipt of the decision, as the case may be. Every such application for internal redressal before Redressal Committee shall be accompanied by fee of Rs.25,000/- and fee shall be paid in the form of D.D. in favour of M.C.G.M.

1st Appeal by the bidder against the decision of C.E./ HOD/ Dean can be made to concerned DMC/Director who should decide appeal in 7 days.

If not satisfied, 2nd Appeal by the bidder can be made to concerned A.M.C. for decision.

Grievance Redressal Committee (GRC) is headed by concerned D.M.C./ Director of particular department for the first appeal/ grievances by the bidder against the decision for responsiveness/non-responsiveness in Packet 'A', Packet 'B' or Packet 'C' and if not satisfied, concerned A.M.C. will take decision as per second appeal made by the bidder.

This Grievance Redressal Committee (GRC) will be operated through DMC (CPD) office where appeals of aggrieved bidder will be received with fee of Rs. 25,000/- from aggrieved bidder. The necessary correspondence in respect of said applications to the aggrieved bidder & concerned department, issuing notices, arranging of Grievance Redressal Committee (GRC) with D.M.C. and further proceeding will be carried out through registrar appointed by MCGM.

No application shall be maintainable before the redressal Committee in regard of any decision of the BMC relating to following issues:

Determination of need of procurement
The decision of whether or not to enter into negotiations
Cancellation o a procurement process for certain reasons

On receipt of recommendation of the Committee, It will be communicate his decision thereon to the Applicant within 10 days or such further time not exceeding 20 days, as may be considered necessary from the date of receipt of the recommendation and in case of non-acceptance of any recommendation, the reason of such non-acceptance shall also be mentioned in such communication

Additional Municipal Commissioner and/or Grievance Redressal Committee, if found, come to the conclusion that any such complaint or review is of vexatious, frivolous or malicious nature and submitted with the intention of delaying or defeating any procurement or causing loss to the procuring entity or any other bidder, then such complainant shall be punished with fine, which may extend to Five Lac rupees or two percent of the value of the procurement, whichever is higher.

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SECTION-7

SCOPE OF WORK

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SCOPE OF WORK

This Department has already invited E-tender for work mentioned as below and Contractor is appointed to carry out the said work:

The work to be carried out in two phases i.e. Phase-I & Phase-II. The E-Tender was invited specifically for Phase-I and Contractor is also appointed to carry out the said work as mentioned below in Phase-I:

In Phase-I : it is required to obtain forest & environment department (MOEF) clearances underWild LifeProtection Act 1972, Forest Conservation Act 1980, Environment Protection Act 1986, any court & legaland other NOC's from other Government Departments, tocarry out all surveys, all regulatory clearancesat the state and union levels, Land acquisition, tree transplantation and project affected persons details for 36.60 M width alongwith Right of Way.

Preparation of designs, drawings, Estimates/Bill of Quantities for construction of 18.30 M wide concrete bridge/ steel bridge/ tunnel and cement concrete carriageway and its acceptance by peer review consultant & B.M.C. and construction of 18.30 M wide concrete bridge/ steel bridge/ tunnel and cement concrete carriageway.

In Phase-II : the remaining construction work of construction of 18.30 M wide concrete bridge/ steelbridge/ tunneland cement concrete carriageway will be carried out.

- ***The objective of this 'Request For Proposal' (RFP) E-tender is to appoint reputed 'Project Management Consultant' (PMC) for "Peer Review" of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation submitted by contractor , Construction work supervision, Quality Assurance, Quality Control & Quality Audit of the work under reference as elaborated in Section-(A) below.***

- ***Duties & Mode of payment, Time Schedule to the 'Project Management Consultant' (PMC) and details of Technical Committee of BMC is as elaborated in Section-(B) (I), (II) & (III).***

Section-(A) - The Scope of Work for appointed Contractor for the said work broadly includes as below & Peer review of the same should be done by Project Management Consultant (PMC):

1. To obtain all the necessary NOc's (forest and environmental), other NOC's from other Govt. Departments as required, to carry out all surveys for 36.60 M width along with Right of way and preparation of design and drawings, construction of concrete bridge/steel bridge/tunnel and cement concrete carriageway of 18.30 m width etc.

2. The selected Bidder, who is either a company incorporated under the Companies Act,1956 or undertakes to incorporate as such prior to execution of the Contract agreement (the "Bidders") shall be responsible for engineering, procurement and construction of the Project under and in accordance with the provisions of a long - term Contract agreement (the "Contract Agreement") to be entered into between the Bidders and the B.M.C. in the form provided by the B.M.C. as part of the Bidding Documents pursuant hereto.

3. B.M.C. intends to seek the assistance of reputed bidders to undertake work of preparation of Feasibility Report, Draft Project Report, Report on Environmental studies and obtaining MOEF clearance, NOC's from other Govt. departments, to carry out all necessary surveys, preparation of design and drawings, construction of concrete bridge/steel bridge/tunnel and cement concrete carriageway etc for subject work.

OBJECTIVE AND BROAD SCOPE OF WORK:

a) Objective

The objective is to carry out Techno-Economic and Financial Feasibility Study, Detailed Project Report, to carry out all necessary NOC's for 36.60 m width along with Right of Way and Preparation of design and drawings, bill of quantities, actual construction of concrete bridge/steel bridge/tunnel and cement concrete carriageway of 18.30 w width.

b) Broad Scope of Work:

It is proposed to take up the assignment in following four Parts :
Part1:Techno-Economic and Financial Feasibility Study
Part2:Detailed Project Report (DPR)
Part3(A):Environmental Studies and getting MOEF Clearance.
Part 3 (B): Clearance from Forest (Wild Life Protection Act 1972, Forest Conservation act 1980, Environment (Protection) Act 1986)/ Defense /Court related issues and any other Govt agencies; as required for 36.60 m width alongwith Right of way.
Part4: Preparation of design and drawings, bill of quantities, actual construction of concrete bridge/steel bridge/tunnel and cement concrete carriageway of 18.30 m width etc.
Broad scope of work includes the following:

Part-1:Techno-Economic/Financial Feasibility Study

(i) Data Compilation relevant for the project

(ii) Finalization of alignment of Road and connectivity to the existing highway corridors/major roads with interchange facilities;

(iii) Topography Survey along the preferred alignment; Total station Survey, Geotechnical Investigation, Traffic diversion plans, General Arrangement Drawings (GAD)

(iv) Traffic and transportation planning studies including Traffic simulation for assessment of traffic on the project

(v) Strategic Environmental and Social Assessment and Screening;

(vi) Initial capital, operating and maintenance cost estimates;

(vii) Economic Analysis;

(viii) Preparation of Feasibility Study Report.

(ix) The consultant should consider the effects of ongoing/proposed infrastructure Projects by MMRDA, MSRDC and railway projects etc.

Part-2: DPR Study

(i) Geotechnical Investigations and Detailed Engineering Surveys for the selected alignment for Road, Tunneling Component and Interchanges as per topography;

(ii) Update traffic forecasts for the project

(iii) Detailed Engineering design of Road infrastructure on reclaimed/elevated land and tunneling component feasibility

(iv) Identify Requirements for Public Utilities and their design;

(v) Prepare Traffic Surveillance systems for safe operation of traffic and security;

(vi) Identification of sources of construction materials including optimal utilization of material excavated

(vii) Preparation of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) of System;

(viii) Preparation of Resettlement and Rehabilitation Action Plan;

(ix) Fix ROW (Right Of way) for accommodating the main carriageway, service lanes for local traffic, provision for all the utilities (Water supply, sewerage, drainage, power, communications etc);

(x) Prepare Strip plan and associated reports for utility relocation, tree cutting and replanting and land acquisition;

(xi) Preliminary Risk Assessment;

(xii) Implementation Schedule and Contract Packaging;

(xiii) Prepare Design, BOQ and Cost Estimates;

(xiv) Operating and Maintenance Costs;

(xv) Economic Evaluation;

(xvi) Financial Analysis and Financing Options;

(xvii) Preparation of Detailed Project Report (DPR)

(xviii) Study on the point of view of Traffic Dispersal at all the entry/exit points

(xix) Feasibility of phasing the project like tunnels, bridges, etc. for independent execution

(xx) Urban Design Aspects

The detailed project study is required to be done and based on the techno economic feasibility study and environmental studies getting MOEF clearance it would be possible to arrive at the recommendation by the consultants. Therefore, geotechnical investigation and detailed engineering studies for the selected alignment for road on proposed reclamation / stilt and and interchanges needs to be done as mentioned in the RFP document.

Part-3(A) :Environmantal studies and getting clerarance of MOEF , GOI.

(i) As per the requirement appointment of expert agency in the field empanelled / accredited by MOEF for the purpose of getting environmental clearance.

(ii) Carry out environmental studies and prepare detailed report.

(iii) Collating the Technical inputs.

(iv) Submission of the proposal to MOEF.

(v) Follow up with varies concerned state level and centre level agencies of Environmental Department & Forest Department.

(vi) Follow up with MOEF, GOI & obtain approval.

Part-4: Bid Documents: Project Preparation

(i) Preparation of bid documents as per the selected project implementation option

(ii) Assist MCGM in bid process management;

(iii) Assist MCGM in evaluation of bids and selection of bidder;

(iv) Assisting in post selection process till signing of Contract Agreement/ Concession Agreement; and

(v) Complete **advisory services** including legal aspects and framework.

2.DETAILED SCOPE OF SERVICES

Part-1: Techno-Economic and Financial Feasibility Study

Activity 1.1: Data Compilation relevant for the project

Probable alternative alignment, the structural options etc.

Activity1.2: Finalization of proposed alignment for Road and alternative optionsfor connectivity to the existing road corridors with interchange facilities

1.2.1 The Consultant shall examine in detail the indicative route/alignment provided by

theMCGM for the project corridor and identify alternative alignments for the project corridor. In addition, Consultants shall evolve alternative options for providing connectivity to the existing corridors with interchange facilities.

Activity 1.3: Identification and Evaluation of alternative alignments/options, selection and refinement of preferred alternative

1.3.1 Qualitative and quantitative evaluation of alternative alignments/ options based on evaluation criteria using the information from detailed investigations, reconnaissance survey (study of topographical sheets, aerial survey and ground reconnaissance survey etc) and taking into consideration various factors such as Engineering, economics, social, ecology and aesthetics for selecting a most suitable route/ alignment for the corridor.

Activity 1.4: Topography Survey along the preferred alignment

1.4.1 Once the route/alignment is selected through a foresaid investigation and surveys, a preliminary survey (a large scale instrument survey by running a traverse along the selected route/alignment) shall be conducted to capture all physical features which affects the location on new route/improvement alignment.

Activity 1.5: Strategic Environmental and Social Assessment and Screening

1.5.1 Strategic Environmental Assessment and Screening (SEAS) is to be undertaken to provide a synopsis of the environmental issues that are relevant to the project corridor and help make the project corridor environmentally sound and sustainable.

1.5.2 During the SEAS, the Consultants shall scope out the extent and type of subsequent EIA that has to be undertaken, provide information/ input required for assessing the technical, economic and financial feasibility of the project corridor and recommend possible modifications in the preliminary project design. Consultants shall develop a management framework for addressing environmental issues in subsequent stages. The environmental and social screening shall help prioritize the sections of the project corridor with regard to environmental issues providing key input whenever phased implementation is envisaged. The Consultants shall keep in mind the particular requirements of the study in carrying out the screening.

1.5.3 Experience has shown that, it is essential that potential displacement and resettlement issues be identified as early as possible in the general process of project development. The objectives of this early and preliminary scope should be the following:

- Generate tentative estimate of the magnitude of the displacement and resettlement issues associated with the project, and thereby obtain a first order of magnitude of the potential cost of R&R;
- Categorize the different types of impacts and losses associated with the proposed footprint; and
- Consider less impacting alternatives.

1.5.4 The key activities the Consultants should undertake during the SEAS are as follows and

details of the scope of these activities are given in Attachment 5.3.

- Surveys;
- Preliminary Analysis of Impact;
- EIA scoping; and
- Environmental and social inputs to Alternatives Analysis and preliminary design

1.5.5 The period of the SEAS should be utilized to develop/ enhance linkages with other factors in the overall process of development of the project corridor, including government departments, local administration, NGOs active in the area, and elected representatives by pursuing a pragmatic and incremental approach to stakeholder analysis and consultations. The environmental surveys shall be coordinated with the social and engineering surveys as far as practical. At the conclusion of the SEAS the Consultants shall prepare an Environmental Scoping Report.

Activity 1.6: Initial capital, operating and maintenance cost estimates

1.6.1 The Consultants will assess the broad capital, operation and maintenance (routine and periodic) costs based on recent similar studies.

Activity 1.7: Economic Analysis

1.7.1 The Consultants will carry out Economic Analysis for the project as per prevailing norms and the required sensitivity analysis.

Activity 1.8: Financial Analysis

1.8.1 The consultant is to prepare a detailed checklist of the potential impactsunder each of the identified risk categories and suggest means to reduce,transfer and/or delegate risks, and provide the probability of riskoccurrence, prepare an allocation of risk responsibility plan, and develop arisk management plan.

1.8.2 The risk management assessment framework will includequantifiable as well as unquantifiable factors, determine which risks can be avoided or reduced, either technically or by other means, determine which risks can and should be insured against, and develop means to prevent commercial organizationalentities from unquantifiable risk. To the extent risks can be mitigated andprovided for such measures will be listed and a risk pricing strategy factored in the project cost for risk management. For those risks that may not be manageable through insurance or otherwise, except through allocation to parties, the consultant is to work out a strategy for risk management. The consultant is to develop and present a balanced risk management framework in the form of aisk allocation matrix with due cognizance of the risk absorbing level of each entity involved in project implementation.

1.8.3 Legal Aspects & Framework: The Legal Review will provide information onthe relevant laws and regulations that might have an impact on the development of the Project and financing of the Project. The Consultant will examine and suggest suitable legal and institutional frame-work, for implementation, operation and maintenance of the project. This would alsoinclude the

impact of policy decisions by the Government, amendments to the existing acts, etc., as may be required.

Activity 1.9: Preparation of Feasibility Study Report

1.1 The consultants shall produce in close liaison with MCGM, a Feasibility Report for the project, based on the results of Activities 1-1 to 1-8. The Feasibility Report should have the following contents.

Volume I: Main Report

(i) Executive Summary;
(ii) Regional/ State Socio-economic Profile;
(iii) Socio-Economic Profile of the project influence area;
(iv) Methodology adopted for the study;
(v) Traffic studies and analysis including Traffic simulation
(vi) Engineering survey investigation surveys/studies & analysis including PAP survey
(vii) Project road description and proposed project elements;
(viii) Strategic Environmental and Social Assessment and Screening;
(ix) Cost Estimates;
(x) Economic Analysis including Sensitivity Analysis;
(xi) Conclusions and Recommendations.

Volume II: Design Report

(xii) Project Road Inventory;
(xiii) Engineering Survey and Investigation Data;
(xiv) Design Standards and Specifications; and
(xv) Pavement, Bridge/road on stilt design

Volume III: Drawings

Based on the analysis, the Consultants will recommend the implementation strategy, mode of financing, implementation schedule and proposed institutional arrangement for time-bound project implementation. The Consultants shall document all the details and analysis carried out under PartI and produce a Part I Report. After studying the options for mode of financing for implementation and maintenance & operation, MCGM will convey the decision on Part II and Part III scope of work.

Part-2: DPR Study

Activity 2.1: Geotechnical Investigations and Detailed Engineering Surveys/ Studies for the Selected Alignment for Road on proposed reclamation / stilt and Interchanges

2.1.1 Carry out geotechnical investigations of existing materials and conditions within the road right of way, including the existing road pavement and formation, to identify materials suitable for use in embankments and pavements, to permit the design of cut and fill slopes and structural foundations, to identify areas where problem materials exist and the treatments proposed for these, and to providethe basis for detailed pavement embankment and structural designs.Investigations for soils and other materials for construction shall be carried outin respect of the likely source, availability and suitability of constructionmaterials. The minimum scope of the geotechnical investigation will be as follows.

2.1.2 **For the Road Alignment:** Bore holes at each major change in pavement condition or in deflection readings, or at suitable intervals, whichever is the lesser. Additional bore holes will be excavated at major changes in soil condition as required. The bore holes are to be excavated to rock or to a minimum of 2m below sub-grade level, whichever is the lesser, and are to be fully logged. Appropriate tests will be carried out on samples from the bore holes to determine the suitability of the various materials for use in widening of embankments or in parts of the new pavement structure.

2.1.3 **For Bridges/stilt roads :** Bore holes at each abutment and at locations across the structure are not more than 200m intervals, subject to there being at least two intermediate bores for structures of more than one span. However, where a review of the feasibility study geotechnical reports and of information available from adjacent crossings over the same waterways (existing road and railway and other bridges, for example) indicates that subsurface variability is such that testing at the intervals set out herein will be insufficient to adequately define the conditions for design purposes, the consultant will decrease the bore hole interval to the extent necessary;

2.1.4 **For Quarries and Other Potential Extraction Sites:** Sufficient investigation to indicate the suitability of materials for various components of the works – embankments, pavements, surfacing, structures, for example, the quantities likely to be available and haul distances to the alignment;

2.1.5 In addition to the aforesaid requirements the consultant will perform soil and materials survey in accordance with IRC: SP: 19-2001 "Manual for Survey, Investigation and Preparation of Road Projects"

2.1.6 Prepare a detailed report setting out the results of the geotechnical investigation, soil and material survey program.

2.1.7 **Detailed Investigations of Flexible pavement:**New pavements shall be designed in accordance with IRC;37-2018 "guidelines for design of flexible pavements." However, the consultant is expected to advise the most appropriate Indian and/or international standards to be followed for design of flexible pavements under this project. For stretches where improvement of existing road is envisaged, the consultant will assess existing pavement conditions. To this end, the following test procedures shall generally be undertaken:

(a) Pavement roughness shall be measured using a bump integrator or similar calibrated equipment, rutting, cracking and raveling should also be measured;

(b) Road inventory survey; A fresh inventory survey shall be carried out to collect the details of all existing road and pavement features along the existing road sections. The Road inventory survey data shall be collected in accordance with the IRC;SP:19-2001.

(c) The pavement condition survey shall be conducted on the existing pavement. The Pavement Condition Survey shall include: Surface distress and extent, Riding Quality (in terms of IRI and BI

values);, Shoulder condition; Embankment condition and Drainage condition;

(d) Pavement composition: The consultant shall ascertain the thickness and the composition of existing pavement by making test pits. The interval of test pits shall be one pit for each kilometer.

(e) Sub-grade soil investigations: The general character of materials excavated from the test pits will be recorded and tests conducted on it in laboratory to determine its physical properties; The laboratory tests will include Gradation test (IS 2720 part IV), Liquid/plastic limit test (IS 2720 part V), Density and optimum moisture content (IS 2720 part VII and Part VIII whichever relevant) and deleterious constituents (IS2720 Part XXVII, in salt infested areas only) and CBR tests (frequency of CBR test shall be one test for each 1000m). The field dry density and moisture contents of sub grade soil shall also been determined. In addition to above test the DCP tests shall be carried out at appropriate interval of the road.

(f) Pavement strength: The Consultants shall carry out structural strength surveys for pavements using Benkelman Beam Deflection technique in accordance with CGRA procedure given in IRC:81-1997 ("Guidelines for Strengthening Flexible Road Pavements Using Benkelman Beam Deflection Technique").

(g) When pavements are too distressed to give meaningful deflection results then CBR tests should be carried out at intervals sufficient to indicate the extent and severity of the problem;

(h) A survey of the drainage condition of the road section shall be conducted.

(i) Detailed subsurface investigations shall be carried out for all road sections where there has been a subgrade failure to assess the causes of such failure and to facilitate preparation of an appropriate pavement redesign for such stretches. Normally, all failed sections would be reconstructed from the subgrade upwards to prevent similar future failure

(j) All the foregoing information shall be shown on a strip-map to facilitate the evaluation of the proposed pavement.

(k) For low-lying road sections subject to flooding, the road embankment may be raised so that the formation (sub-grade) level has a free-board of about one meter above the highest recorded level. However, Ingress and Egress levels of existing adjoining properties shall be taken into account and raising of road embankment may be carried out without much affecting the Ingress& Egress Levels of adjoining properties. For the design of high embankments including bridge approaches where appropriate, IRC Publication 75-2008 should be followed as a minimum standard.

2.1.8 Detailed Investigations for Rigid Pavements: For design of Cement Concrete pavements in case of new construction 'K' value tests shall be carried out with 75mm diameter plate at the one test per kilometer per lane unless foundation changes warrants additional tests. For investigations in connection with strengthening of existing rigid pavement the required tests will be carried out in accordance with IRC;SP;17 Recommendations about overlays on Cement Concrete pavements.

2.1.9 Natural occurring aggregates for pavement courses: Survey for naturally occurring materials such as stone

aggregates, gravel, murum, kankaretc to be used in construction shall done for identification of suitable quarries for these, the amount of materials likely to be available from each and determination of physical properties and strength of the materials. For every quarry source at least three specimens shall be tested for each type of material met with. The samples for the test shall be representative and collected in accordance with the procedure set forth in IS: 2430. The feasibility of using the excavated tunnel muck as road construction material shall be explored and the necessary tests shall be carried out.

2.1.10 Manufactured items and water for construction: The consultant shall gather information in respect of manufactured items such as steel, cement, bitumen and lime regarding sources of supply and distance of nearest rail head. Information shall also be gathered regarding availability of water near the works site and its suitability in conformity with IS; 456 for construction purposes.

2.1.11 Drainage studies: The consultant shall collect adequate information about the drainage pattern to devise the effective drainage system, which brings into focus the need and requisite studies and investigations; the main objectives of the drainage system is fixing the grade line of the road, design surface and subsurface drainage system and pavement design. The drainage investigations shall include but not limited to determination of:

- High Flood Level
- Depth pond level,
- Water table;
- Range of tidal levels
- Surface runoff;

For cut sections in rolling and hilly areas it would be necessary to carry out the special investigations for sub terranean flows and seepage of irrigation water from the fields situated above the road.

2.1.12 Inventory of Structures and Condition Survey: The Consultants shall make an inventory of all the structures (bridges, viaducts, ROBs, culverts, outfalls etc.) along the road under the project. The inventory for the bridges, viaducts and ROBs shall include the parameters required as per the guidelines of IRC-SP:35-1990. The inventory of culverts shall be presented in a tabular form covering relevant physical and hydraulic parameters. The Consultants shall thoroughly inspect the existing structures and shall prepare a report about their condition including all the parameters given in the Inspection pro-forma of IRC-SP; 35-1990. The condition and structural assessment survey of the bridges / culverts / structures shall be carried out by senior experts of the Consultants.

I. For the bridges identified to be in a distressed condition based upon the visual condition survey, supplementary testing shall be carried out as per IRC-SP:35 and IRC-SP:40. Selection of tests may be made based on the specific requirement of the structure.

II.The evaluation of the load carrying capacity of the bridge shall be carried out as per IRC-SP: 37 ("Guidelines for Evaluation of Load Carrying Capacity of Bridges"). Consultant shall carryout necessary surveys and investigations to establish the remaining service life of each retainable bridge or structure with and without the proposed strengthening and rehabilitation according to acceptable international practice in this regard.

2.1.13 For reclamation of marine/ alluvial clay, Geotechnical investigations are required to be carried out as per best international practices. Safe disposal of the dredged material and location of dumping grounds and cost thereof shall be explored. The option regarding fill material using dredging or other economical methodologies shall be explored. The settlement analysis of the proposed road on reclamation shall be submitted. The environmental aspect of land fill reclamation shall be carried out.

Activity 2.2: Update traffic forecasts for the project corridor for the period upto 2033/ 2043

2.2.1 Update the traffic forecast on the project corridor for the period upto 2033/43 carried out during Stage I and if required forecast the traffic on the project corridor till the end of concession period. BMC has not carried out traffic forecast study.

Activity 2.3: Detailed Engineering design of Road infrastructure including Bridges/stilt roads, reclamation road and Dispersal System

2.3.1 Detailed Engineering Design: The Consultant is required to carry out the detailed engineering design of Project roads by making extensive use of current computer based survey and design techniques (total stations, CAD, etc.) and with reference to current international "best practices" for this type of roads.

The design would form the basis for the detailed cost estimates to be used in the economic analysis and in the assessment of the total project coasts;

2.3.2 Detailed Design – Road Alignment: Using as a basis the existing road alignments or new route and profile and the terrain model developed from the topographical survey, prepare a final design for the road to be upgraded, including intersections, approach roads and urban areas. In doing this, it is expected that the consultant will make use of suitable commercially available design software. The output of this activity will be plan and profile sheets at 1:2000 horizontal scale and 1:200 vertical scale showing setting out all information on all existing plan features, construction limits, right of way limits, intersection layouts, existing ground line, proposed finished profile, typical cross sections of the main alignment, connecting roads, drainage structure locations and preliminary arrangements, sign posting, cross road locations with clearances to under/overpasses environmental impact amelioration measures, relationships to encroachments and nearby habitation areas, etc.

2.3.3 A separate design report will describe the basis for the geometric design, the pavement design, hydraulic calculations for all significant structures, structural design, etc.

2.3.4 The final design shall be suitable for estimating and, ultimately, for bidding and construction purposes, Cross sections at 20m intervals, and at major horizontal control points (tangent points, curve transitions, etc), will also be prepared. Drawings for intersection layouts, sections in urban areas and other major features will be prepared to an appropriate larger scale with necessary setting out and drainage information. For urban areas, details of utilities, drainage, parking bays, lighting etc. will be given. Standard drawings, for signs and other traffic control features, for minor drainage structures, and for other minor elements, will be provided.

2.3.5 Upon completion of the detailed design, stake out the right of way limits in sufficient detail for the boundaries of properties which are to be acquired to be defined. Set out these boundaries in the field and on property maps and prepare schedules of land to be acquired, including details of utilities to be shifted and encroachments (such as trees and hutments) to be removed, in the details required by the MCGM and the State of enable the land acquisition process and human re-settlement planning to proceed.

2.3.6 Detailed Design – Pavements: Before commencing the actual design of pavement the consultant shall establish design standards and traffic loadings and obtain approval from MCGM. The pavement design shall be based on approved design standards and traffic loadings and on the outputs of the geotechnical investigation and of the road condition surveys.

2.3.7 Detailed Design-: The Consultant shall carry out the detailed designs for all drainage, stilt and other structures. The designs will be developed to maximize the use of standard components and superstructure designs. In particular for smaller structures – box and pipe culverts, under and overpass structures, etc. – precast alternatives will be preferred. Substructures will be dimensioned on the basis of detailed site investigations and will reflect current international practice. In selecting foundation type the consultant will also take into account the time required for the construction of alternatives, and give preference to those which minimize construction time.

2.3.8 Design work will be carried out in accordance with accept able international practice and will make maximum use of computer based techniques. General design parameters and loading will follow Indian Roads Congress guidelines, amended where necessary in consultation with the MCGM to suit current international practice. Seismic, ship impact and other loadings will be taken into account as appropriate. Specific attention need to be paid for design of tunnel. As per the requirement, the road tunnel need to be designed for ventilation and lighting.

2.3.9 For each major structure, the detailed design drawings will provide a general arrangement with setting out details; bore log information, protection arrangements and general notes. For each type of smaller structure a general arrangement will also be given, without the site specific details. The remaining drawings will provide all details of the structure, in sufficient details for construction purposes.

2.3.10 Identify on the general arrangements the important design parameters – loadings, navigation clearances, etc. to enable bidders to prepare alternative design which achieve the same objectives as those designed hereunder. It is envisaged that the contract documents will permit bidders to propose alternatives which offer advantages in terms of cost and/or construction time.

2.3.11 Cross Drainage Structures: For the new cross drainage structures i.e. culverts surveys and investigations are carried out essentially for Selection of site: where defined channel are existing for water courses, the culverts may be located on that; in case of provision of water way only for balancing purposes along a flat

featureless terrain, the spacing and location may be for achieving the best balancing work along the design geometric alignment.

2.3.12 Collection of Data for New Structures: For designing culverts, hydrological, physical and foundation data are required to be collected. In addition, site inspection with local enquiry and a study of the nearby road or sewage/water supply cross-drainage structures on the same or in the vicinity, will provide useful information about HFL, afflux, tendency to scour, the probable maximum discharge, the guidelines specified in IRC:SP19-2001 shall be followed. Design of New Cross-drainage Structure:

The design of new cross-drainage structures include:

a. Estimation of design discharge(runoff and sewage)

b. Choice of type of structure to be provided

c. Determination of waterway and vent height

d. Structural design of foundations, sub-structure and super-structure.

2.3.13 For the details of the design procedure, reference may be made to IRC: 13 "Guidelines for the Design of Small Bridges and Culverts". For design of minor bridges, reference may be made to IRC: 78 on "Foundation and Sub-Structure" and relevant MOST Standard Drawings for super-structure.

2.3.14 Improvements to Existing Drainage Structures are proposed: The existing drainage structures proposed for improvement should be surveyed and data collected on the following points:

a. Type of structure and details of span, vent height etc;

b. Existing width of roadway;

c. Condition of foundations, sub-structure, super-structure, parapets, etc. and any deficiency to be rectified.

d. Load carrying capacity of the structure

e. Adequacy/Inadequacy of waterway, signs of silting or blocking of the vent way, over topping of the structure, observed scour level;

2.3.15 Detailed Design – Traffic Control and Other Facilities: Prepare pavement marking and sign layout plans. Both are to be based on current international practice for roads of this type, adjusted through discussion with the MCGM to suit Indian conditions. Prepare roadway lighting designs for sections through urban areas and other areas where lighting is required. Lighting design is to be based on a recognized international standard.

2.3.16 Specifications: Prepare specifications for all aspects of the works, based on current and acceptable, Indian and international standards and work methods for projects of this type.

2.3.17 Design Report: Prepare a final design report which will include the basis for design of each element of the works, calculationssupporting the final designs and references to standards adopted.

Activity 2.4: Identification of sites for offices during construction (Main site and satellite offices), casting yards, stacking yards etc.)

2.4.1 Based on a review of the traffic patterns on the corridor, and availability of land, the consultant is to select sites for site offices, casting & stacking yards.

Activity 2.5: Identify Requirements for Public Utilities

2.5.1 The Consultants shall collect details of all important physical features along and across the alignment within the RoW. These features affect the project proposals and should normally include buildings and structures, monuments, burial grounds, cremation grounds, places of worship, stream / river / canal, water mains, severs, sewerage, gas/ oil pipes, crossings, trees, plantations, utility services such as electric, and telephone lines (O/H & U/G) and poles, optical fibre cables (OFC) etc. The survey would cover the entire right-of-way of the road on the adequate allowance for possible shifting of the central lines at some of the intersections locations.

2.5.2 The information collected during reconnaissance and field surveys shall be shown on a strip plan so that the proposed improvements can be appreciated and the extent of land acquisition with L.A schedule, utility removals of each type etc. assessed and suitable actions can be initiated. Separate strip plan for each of the services involved shall be prepared for submission to the concerned agency.

2.5.3 Consultants shall assess the requirement of public utilities (water supply, sewerage, main drainage, electricity, gas, telephones, optical fibre cables, etc.) along the project corridor as the project corridor provides a direct connectivity to the developed land use on one side (which currently acting as physical barrier). The consultants should obtain from the utility companies details of their requirements and develop designs for the locations and depth of the different utility services. The preliminary designs should define clearly the parts of the corridor to be reserved for utility services. The consultant should also indicate the locations how and where the utilities are to cross the corridor.

Activity 2.6: Prepare Traffic Surveillance systems for safe operation of traffic and security

2.6.1 An efficient and state -of –the-art, Intelligent Transport System (ITS) based Traffic Management/Surveillance system shall be designed for the corridor. Surveillance systems will include the following:

a) Emergency evacuation system;
b) Emergency Communication System (ECS);
c) Variable Message Signs (VMS);
d) Meteorological sensors;
e) Automatic Traffic Counter-cum-Classifier (ATCC);
f) Closed Circuit Television (CCTV) Surveillance;
g) Main Control Centre;
h) Traffic Management Systems; and
i) Security System

Activity 2.7: Identification of sources of construction materials including optimal utilization of material excavated

2.7.1 The consultant is to identify the sources of the suitable construction materials (soil, moorum, metal, sand, etc.) required for the project. The Consultant is also to make an environmental assessment of the site of the materials and to design appropriate environmental mitigation measures in accordance with the applicable laws. Suitable samples from borrow areas will be collected for laboratory testing. Suitability or otherwise of materials available at quarries and extraction sites shall be established. Quantities of materials likely to be available from

such quarries or extraction sites, and the haul distances, shall be defined. Consultants shall study the optimal utilization of material excavated from tunnel.

Activity 2.8: Preparation of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) of System

2.8.1 The proposed project would be governed by various Acts, rules and regulations set by the Ministry of Environment and Forests (MOEF) at the Central level and other regulatory agencies at the State and local level. Various environmental standards, specifications and guidelines of Central Pollution Control Board (CPCB) and state level agencies will also be applicable. Hence, the required Environmental Impact Assessment (EIA) studies need to be carried out during various stages of the study.The EIA study should be as per the requirements of details furnished in Attachment 5.4

2.8.2 The consultant shall prepare a detailed report on project for submission to MOEF at central level & other regulatory agencies at state level. If required, the consultant shall appoint expert agency in the field empanelled / accredited by MOEF for this purpose. The consultant shall follow up with the state level and centre level agencies and obtain the necessary clearances for the project. It is the responsibility of the consultant to procure NOC from MOEF for the project. MCGM will only facilitate procuring the NOC.

2.8.3 After preparation of EIA studies, the Consultant should prepare an Environmental Management Plan (EMP) or environmental management system to mitigate the adverse environmental impacts. This is to be prepared in accordance with MoEF Guidelines. The EMP is to include precise proposals for the location and extent of tree planting for the replacement of any trees to be cut down.

Activity 2.9: Preparation of Resettlement and Rehabilitation Action Plan

2.9.1 As per Joint Technical Committee's report, the project does not involve land acquisition and virtually no resettlement component. However, the Consultants shall study the proposal and prepare R&R plans for the affected PAPs due to the project corridor to the extent required.The consultant shall also advise the matter regarding land acquisition, if any. The consultant should undertake a census and socio-economic baseline survey of Project Affected Persons. Undertake consultation with key stakeholders Refine the Entitlement Framework, and Draft the Resettlement Action Plan (and if necessary the Resettlement Policy Framework). The RAP should address the details presented in Attachment 5.5.

Activity 2.10: Fix ROW for accommodating the main carriageway, necessity of service lanes for local traffic, provision for all the utilities (Water supply, sewerage, drainage, power, communications etc)

2.10.1 The Consultants shall develop a standard RoW width and cross section to accommodate the road and utility requirements resulting from the preliminary design. As the project has different structural elements elevated, embankment, stilt road, reclamation road etc., the Consultants to prepare different cross sections for different sections. From the output of the design activities, Consultants shall also identify the locations where a larger RoW will be required to accommodate interchanges, etc. The Consultants should also identify locations where the RoW may need to be reduced due to land acquisition, topographical or environmental constraints.

Activity 2.11: Prepare Strip plan and associated reports for utility relocation, tree cutting and replanting and land acquisition

2.11.1 Using the material from activities above, the Consultant shall prepare a base map of the project corridor showing the location of the road carriageways and structures. On this base map, the Consultant shall show the following:

- Location of existing utility services (both underground and above ground), and the scheme for their relocation, including any possible land acquisition requirements;
- Location and type of trees to be felled and the planting scheme for their replacement; and
- Land to be acquired.

2.11.2 The map is to be accompanied by separate reports giving details of

- The number and types of trees to be felled, the number and types of trees to be replanted, and with estimates of cost;
- The schedule and costs of the relocation of utilities and the financial and contracting arrangements for the relocation, agreed with the concerned department. The report should indicate clearly the procedures and lead times needed for relocation of each utility that can be input to overall implementation schedule for the project in order to mitigate the risk of utility relocation delaying project implementation; and
- The costs, schedule and financial arrangements for land acquisition.

2.11.3 **Tree Cutting and Replacement:** The Consultants shall identify the trees within the proposed ROW which are required to be cut/ transplanted during the construction phase of the project and number the same. The Consultants shall identify such trees by type of girth and its distance from the centre line of the proposed road and prepare a tree cutting proposal for submission to Tree Authority of MCGM, Forest Department, etc. The Consultants shall obtain approval for the proposal after necessary compliance to the remarks made by Tree Authority. Deposit for the trees to be cut shall be the responsibility of concerned Project Implementation Agency. Requirement of compensatory plantation in lieu of the trees to be cut shall be prepared following the norms and practices of Tree Authority of MCGM, Forest Department, etc.

2.11.4 **Land Acquisition Proposals:** The consultant shall prepare Cadastral maps wherein the lands and properties which are getting affected on account of implementation of the project shall be marked precisely. For preparation of maps for land acquisition the consultant shall collect the relevant information such as survey number, name of owners, and area etc for preparation of Land acquisition proposals. The Consultant shall obtain available city survey maps and super impose the Cadastral survey on the city survey maps. The ROW proposed to be acquired shall be set out on ground and joint measurements shall be made for the lands /structures affected along with revenue officials. In case the city survey maps are not available with the concerned Authority, the Consultant shall prepare maps acceptable to the competent Authority so as to enable it to initiate and complete the land acquisition proceedings. The consultant shall also prepare a land acquisition proposal for Authority and comply with remarks which the competent MCGM may make during the process of Land Acquisition. The Land acquisition proposal contain the following details

i. Government owned; land unencumbered;
ii.Privately owned land unencumbered;
iii.Land in open setback owned by the Government or private falling within ROW;
iv.Built up setback to be acquired for till ROW; and
v.Land occupied by the slum /land occupied by declared slum.

2.11.5 The Consultant shall set the ROW on ground as per the approved final alignment and get it verified from the concerned Authority before preparing the LA plans/ R&R plans.

Activity 2.12: Preliminary Risk Assessment

2.12.1 In conjunction with concerned departments, the Consultants shall make a preliminary assessment of the potential risks to the project which could result in substantial increase in costs over and above the increase covered by normal contingencies.

Activity 2.13: Implementation Schedule and Contract Packaging

2.13.1 The consultant is to prepare a works schedule for implementation of the project corridor (each phase of the corridor development) such that key dates may be included within the contract document and thus assist supervision of the contractor. Although final arrangements shall be the responsibility of the contractor, the Consultants shall prepare an initial temporary traffic diversion plan, in conjunction with the implementation schedule, such that the contractor may include for such work in overall contract cost estimate. An initial packaging of contracts is also to be prepared.

Activity 2.14: Prepare Bill of Quantities and Cost Estimates

2.14.1 Prepare unit cost estimates for each of the items included in the scope of work. These estimates are to be developed from the cost of basic inputs – materials, equipment, labor, together with overheads, profit, etc – and are to be checked against rates for similar works bid in Maharashtra/India.

2.14.2 Combine these costs with the quantities developed by the detailed engineering design activity group, for the priority lengths, to produce project base costs. These are to be prepared; (i) on a per kilometer basis to allow subsequent repackaging if necessary; and (ii) on a contract package basis. Calculations are to be spreadsheet or similar software based.

2.14.3 After discussion with MCGM, make suitable allowance for physical and price contingencies, and produce final engineering estimates for each of the contract packages. These are to be presented in the form of the final Bill of Quantities for each contract package, and are to be supported by a report detailing all calculations, and are to be accompanied by a disk copy suitably documented.

Activity 2.15: Operating and Maintenance Costs

2.15.1 The consultant is to estimate the annual operating and maintenance costs over the life cycle of the project. The maintenance costs should include for main bridge, approach viaducts, interchanges etc., provision of a routine

and periodic maintenance and financing options.

Activity 2.16: Economic Evaluation

2.16.1 The Consultants will update the Economic Analysis carried out for the project carried out in Stage I considering the updated capital cost, operation & maintenance costs, economic benefits, etc.

Activity 2.17: Financial Analysis

2.17.1 The Consultants will update the Financial Analysis and Financing Options carried out for the project considering the updated capital cost, operation & maintenance costs, project revenues, risks, etc.

Activity 2.18: Study on the point of view of Traffic Dispersal at all the entry / exit points

2.18.1 The consultants will study on the point of view of traffic dispersal at all the entry exit points.

2.18.2 Based on the studies, the consultant will suggest the plans and designs of intersections at all the entry / exit points.

Activity 2.19; Feasibility of phasing the project like tunnel, bridge, etc

2.19.1 The consultants will study the feasibility of phasing the project in to different parts such as tunnel, bridge, road in reclamation, etc with proper connectivity and utilization of the different phases.

2.19.2 The consultants will suggest the priority of the phases in respect of speedy implementation of the project.

Activity 2.20: Preparation of Detailed Project Report (DPR)

2.20.1 The consultants shall a Detailed Project Report for the project corridor, based on the results of Activities 2-1 to 2-19. The DPR should have the following reports.

I Executive Summary
II Main Report;
III Design Report;
IV Materials Report;
V Engineering Report;
VI Drainage Design Report;
VII Economic and Financial Analysis Report;
VIII Environmental Assessment Report; and
IX Resettlement Action Plan (RAP).

Part-3(A) , 3(B) Environmental studies and getting clearances of MOEF, GOI, Clearances to be obtained from Forest under Wild Life Protection Act 1972, Forest Conservation Act 1980, Environment (Protection) Act 1986 / Defense /Court related issues & any other Govt. agencies; as required & explained above

Part-4 Bid Process Management:

Activity 4.1: Preparation of bid documents as per the selected project implementation option (RFQ, RFP, Draft concession agreement based on Model Concession Agreement) Prior to drafting Bid Documents, the Consultant shall finalize the details of the transaction structure. To this end, the Consultant shall prepare, at minimum, the following:

a. Detailed technical specifications and quality standards
b. Manual for specification & standards

c. Proposed bid evaluation criteria

Preparation and finalization of the Bid Documents

The Consultant is expected to prepare and finalize the bid documents to be issued to the pre-qualified entrepreneurs and to assist MCGM in drafting the RFP document covering inter alia, instructions to bidders, draft concession agreement, performance specifications, necessary schedules, formats, etc. The important aspects of the RFP document regarding design and specifications are as follows:

Design:

(i) To prepare loading standards and design parameters

(ii) To prepare parameters and General Arrangement Drawings. It should inter alia cover the following

a. Detailed alignment

b. Vertical and Horizontal clearances

c. Geometric design including horizontal and vertical profile

(iii) Shape and structural details

a. Sub-structure and super-structure design of elevated structures (interchanges, viaducts, etc.) and traffic tunnels considering requirements of strength, safety, durability and aesthetics

b. Live load requirements

c. Wind load analysis and requirements

d. Wave, tide, current loading

e. Seismic load requirements

f. Aesthetic criteria

Specifications:

(i) The specifications for the various items of works and the design criteria should be as per MoRTH guidelines and IRC's design specifications for road and bridge works, the specifications for road works / Bridge works, approved by STAC and adopted by MCGM and the design criteria or current prevailing international standard practices. For any item not covered in the aforesaid specifications and guidelines, the Consultant shall propose/ draft the appropriate specifications.

(ii) The specifications in the concession agreement shall be on the lines of model document prepared by Ministry of Road Transport and Highways, Government of India applicable to all National Highway works.

(iii) The bid documents and concession agreement shall be prepared for the entire project on PPP basis or similar other basis for the approved options

The Consultant shall be responsible for revising and amending bid documents, as necessary.

RFQ: Consultants shall prepare the RFQ documents based on Model RFQ documents issued by planning commission. Consultants shall assist MCGM in short-listing of the bidders for further issue of RFP documents.

RFP: Consultants shall prepare the RFP documents based on Model RFP documents issued by planning commission.

Draft Concession Agreement: Consultants shall prepare the Draft Concession Agreement based on Model Concession Agreement issued by planning commission including IT based monitoring framework for quality construction and performance during the operation.

Activity 4.2: Assist MCGM in the process of availing Viability Gap Funding from Government of India (if applicable)

Consultants will assist MCGM for obtaining in-principle approval for VGF from Government of India.

Activity 4.3: Assist MCGM in bid process management

At the pre-proposal stage, the bidder's views will be sought on various aspects of project implementation. The Consultant will attend the meetings, pre-proposal conference to offer advice and assistance to MCGM in providing necessary clarifications etc. The views, comments and suggestions of bidders as recorded in the pre-proposal conference shall be evaluated by the Consultants and put up with their recommendations to the MCGM with respect to technical, financial and legal issues. Based on this review and the results of conference, the Consultant will prepare a report with recommended changes to the RFP including the project implementation/ financing structure.

Activity 4.4: Assist MCGM in evaluation of bids and selection of bidder/ concessionaire

The Consultant shall assist MCGM in the evaluation of PPP proposals in accordance with the criteria laid down in the bid (RFP) document and recommend the preferred bidder. The Consultant shall assist in evaluating the technical and financial bids and preparation and finalization of evaluation report covering the details of evaluation including eligibility, responsiveness to the RFP conditions.

Activity 4.5: Assisting in post selection process till signing of Contract Agreement/ Concession Agreement

The Consultant shall assist MCGM in all respects towards signing of the Contract Agreement/ Concession Agreement.

Activity 4.6: Complete transaction advisory services including legal aspects and framework

The Legal Review will provide information on the relevant laws and regulations that might have an impact on the development of the Project, private sector participation and financing of the Project. The Consultant will examine and suggest suitable legal and institutional frame-work, for implementation, operation and maintenance of the project. This would also include the impact of policy decisions by the Government, amendments to the existing acts, etc., as may be required.

5. Deliverables, Time and Payment Schedule

The bidder shall deliver the following deliverables (the "Deliverables") during the course of this period. Time schedule for important Deliverables and the payment schedule linked to the specified Deliverables is given below:

6.Time requirement (Excluding monsoon):

Sr.No	Activity	Time in Months	Cumulative
1	Submission of engineering Survey (Topography /Total station survey etc.), Geotechnical Investigation and any additional tests/changes etc., General Arrangement Drawing (GAD), detail feasibility report by contractor & peer review consultants report on same.	2	2
2	Traffic study and dispersal view considering PAP's, Land acquisition, minimum cutting of trees, effects of Draft D.P. 2014-2034 and effects of ongoing /proposed infrastructural projects by MMRDA, MSRDC, and Railway Projects etc. and its acceptance by peer review consultant & BMC , Detailed Design & Estimate, Finalization of DPR.	2	4
3	After clearance from Peer review consultant for design & estimate, Peer Review of detailed design & estimate will be carried out by BMC & further Process will be initiated.	2	6
4	The design, specifications and final execution drawings of construction and its acceptance by the peer review consultant & BMC.	1	7
5	Environmental Impact Assessment and obtaining all regulatory clearances at the State and Union levels with their approvals.	5	12
6	Actual construction of bridge/tunnel and carriageway (subject to actual cost of work done and as per tender conditions) **Note:** The payment will be made after scrutiny & certification by Project Management Consultancy i.e. PMC in co-ordination with flow chart/bar chart submitted by bidder at various stages	36	48
7	To obtain any other allied NOC's during the progress of work and satisfactory completion of the work.	Till completion of work	-

7. Reporting

7.1 The contractor will work closely with the MCGM. The MCGM will constitute a Technical Committee for

the purpose of technical guidance and monitoring of the assignment.

7.2 The Chief Engineer (Roads, Traffic) of the MCGM will be responsible for the overall coordination and project development. He will play a coordinating role in dissemination of the Contractor's outputs, facilitating discussions, and ensuring required reactions and responses to the Contractor.

7.3 The Contractor may prepare issue Papers/ Working Papers highlighting issues that could be comecritical for the timely completion of the Project and that require attention from the MCGM.

7.4 The Contractor will make a presentation on all the reports submitted for discussion with the Technical Committee. The Contractor is required to prepare and submit a monthly progress report that includes and describes, interalia, general progress to date; data and reports obtained and reviewed, conclusions to date, if any; concerns about availability of, or access to, data, analyses, reports; questions regarding the scope of work and related issues; and so on. The Contractor's work on the scope of work tasks should continue while the report is under consideration and is being discussed.

7.5 Regular communication with the Chief /Chief Engineer is required in addition to all key communications. This may take the form of telephone/teleconferencing, emails, faxes, and occasional meetings.

7.6 The Deliverables will be submitted as per schedule provided in this e-tender.

8. Completion of work in accordance with scope of work

8.1 All the study outputs including primary data shall be compiled, classified and submitted by the Contractor to the MCGM in soft form apart from the reports indicated in the Deliverables. The study outputs shall remain the property of the MCGM and shall not be used for any purpose other than that intended under these scope of work without the permission of the MCGM.

- **Strategic Environmental Assessment and Screening**

Surveys: The Consultants shall collect information on the existing environment scenario from secondary sources, and identify gaps to be filled, relevant to the environmental screening needs from primary surveys. The consultants shall survey the environmentally sensitive locations on and along the project road, as well as within the project's influence area. The consultants shall extensively use the video records of the project road (carried out as part of the engineering surveys). All regionally or nationally recognised environmental resources and features within the project's influence area shall be clearly identified, and studied in relation to activities proposed under the project. Typically, these will include stretches with significant roadside trees; environmental and common property resources such as forests, large water bodie, bays, mangrove forests, estuaries etc and major physical cultural properties. All these may be depicted using a line diagram or a strip map.

Preliminary Analysis of Impacts and Management Measures: The consultants shall conduct a preliminary analysis of the nature, scale and magnitude of the impacts that the project is likely to cause on the environment, especially on the identified VECs, and classify the same using established methods. For the negative impacts identified, alternative mitigation/management options shall be examined, and the most appropriate ones suggested. The preliminary assessment should clearly identify aspects where the consultants shall also analyse indirect and cumulative impacts during all phases and activities of the project. For the positive measures identified, alternative and preferred enhancement measures shall be proposed.

EIA Scoping: This shall be a direct outcome from the environmental screening. The consultants shall define boundaries of the project EIA after a careful consideration of the baseline scenario, likely impacts on the identified VECs, and the proposed mitigation and enhancement measures. The scoping shall include that which will be covered in the project EA along with the "how, when and where" of each activity recommended. It shall include a listing of other environment issues that do not deserve a detailed examination in the project EA (covering, for example, induced impacts that may be outside the purview of the Employer) along with a justification. The scoping needs to identify and describe the specific deviations or inclusions vis-à-vis the original ToR, if any, along with a justification; modify the ToR for the project EA, if required; and recommend studies that need to be conducted in parallel but are outside the EA process.

Environmental and Social inputs to Alternatives Analysis & Preliminary Project Design: The EA consultant shall make design recommendations, related to alignment (major/minor shifts, bypasses or different route alternative), road cross-sections, construction material use, and mitigation & enhancement measures. The EA consultant shall interact regularly with the engineering consultants and familiarize themselves with the project's overall feasibility analyses models, so that the EA inputs are in conformity to the needs of the overall Study (for all the different alternatives under consideration).

In the cases of very significant environmental losses or benefits, the consultants shall estimate the economic/financial costs of environment damage and the economic/financial benefits the project is likely to cause. In the cases, the impacts or benefits are not too significant, qualitative methods could be used. In addition, wherever economic and financial costs of the environmental impacts cannot be satisfactorily estimated, or in the cases of significant irreversible environmental impacts, the consultants shall make recommendations to avoid generating such impacts.

- **Environmental & Social Assessment**

SCOPE OF WORK

The scope of work for the Environmental & Social Assessment shall include but not limited to the following:

ENVIRONMENTAL ASSESSMENT

Task 1: Description of Proposed Project:

The Consultant should provide a brief description of the proposed project using maps at appropriate scale. The magnitude of the proposed development with respect to the existing facilities including those used by the fishing and other communities should be clearly described. The description should include information on expected increase in traffic on the bridge (with due consideration of seasonal variations), related rise in road and metro traffic volumes during the design period at five year interval, present and proposed transportation routes, expected additional demand on social infrastructure due to the proposed development and present and proposed land used in the study area.

Information on pre construction and post construction activities, schedule including the quantities of construction material and haul routes, work force and support facilities and services, operation and maintenance activities, required off site investment and life span should also be provided.

Task 2: Existing Environment and Base Line Condition Data Collection

The Consultant will collect and present data on relevant physical, biological and socio economic conditions for the entire catchment area. Broadly, the following form of the data categories should be covered.

Physical: Geology, topography, soils, climate and meteorology (with emphasis on critical seasons) ambient air quality, surface and ground water hydrology, existing source of air emissions, existing water quality status for the terrestrial environment, bathymetry, tidal ranges, coastal currents, water quality and sediment quality for the marine environment.

Biological: An inventory of flora and fauna, sensitive habitats and endangered species, and parks and reserves.

Socio Economic Conditions: Population, land use, plant development activities, community structures, employment, distribution of income and civic amenities.

Field surveys and data collection as part of is expected to be limited to:

Hydrology: Observations on coastal currents project area (at about three locations as required as per best practicing standard) for spring and neap tides to provide a clear idea on movement of coastal waters along with tracer study for dye/ floats release to provide quantitative estimate of impact of the project on siltation of creeks estuciries , bays etc. Concurent total observations should also be carried out at two suitable locations along the eastern coat of Island city and western coast of main land.

Water and Sediment Quality: Observations on coastal water and sediment at locations within the project area to define the existing status of aquatic Eco systems. The observations should cover but not to be limited to physic chemical parameters including DU, BOD, nutrients, oil and grease and heavy metals; bacteriological quality (total and faecal coliforms) and biological parameters (phytoplankton, zooplankton and benthos)

Ambient Noise: Observation should cover sensitive receptors near existing and proposed main transport corridors to provide ambient Leq (day) and Leq (night) levels should be covered and repeated on three days at each location. All sensitive receptor sites should be covered by the survey.

Ambient Air Quality: Observations should cover sensitive receptors near existing and proposed main transport corridors to provide observations for three consecutive days at a minimum of eight locations should be made.

The Consultant however encouraged to use professional judgment and local knowledge in further defining data requirement.

Task 3: Environmental Impacts

The Consultant will identify positive and negative impacts likely to result from the proposed project, interpreting "environmental" through the EA to include Socio economic impacts as well impacts on the natural environment. Opportunities for enhancement of environmental and socio economic should be explored.

The Consultant will identify and obtain data on all project activities and schedules during the construction and operation phases. A closed interaction between the teams conducting environmental and technical studies is expected at this stage. The Consultant will establish the probable impacts of all project activity and clearly describe the methodology for their assessment. While evaluating the project impacts special attention should be given to the impacts due to the:

- Construction activities
- Movement of construction material
- Visual intrusion
- Long term impacts on Marine environment due to reclamation, road bridges.
- Chemical discharge into marine environment due to cargo handling and
- Impacts of change in traffic on existing and proposed transportation corridor

The evaluation of social impacts will include probable community severance and adverse impact on the availability and access to natural resources to the existing population due to the project.

While evaluating the project impacts special attention needs to be paid to safe guard of local fishing resources.

The extent and quality of available data, key data gaps, and uncertainties associated with predictions should be described. Wherever possible, impact should be described in quantitative terms. Topics that do not require further attention should be specified. Any impacts that are irreversible and/or cannot be avoided or mitigated should be identified. It is desirable that proposal should describe the approach for prediction of impacts in adequate details to make the procedure transparent.

The Consultant will also include the salient findings of technical studies on impacts of the proposed construction on coastal hydrodynamics with emphasis on probable siltation or beach / coastal erosion.

Task 4: Analysis of Alternatives

The Consultant will make a systematic comparison of alternatives considered during project planning and pre-feasibility studies (i.e. alternatives for transport, sources of construction material-metal and earth fill, replacement of traditional construction material by locally available substitute), plus alternatives considered in the feasibility study and alternatives that may be proposed in EA itself. The alternatives should be compared in terms of environmental impacts and social impacts (i.e. involuntary resettlement); capital and recurrent cost including the mitigatory measures and suitability under local conditions. The no action alternative must be included in the analysis.

Task 5: Environmental Management Plan

Mitigation Plan: For each significant negative impact, the Consultant should recommend and describe a measure to avoid, mitigate (reduce to acceptable levels) or when unavoidable, to compensate for the damage. The description should include an estimate of capital and recurring course and should identify the party responsible for implementation. Any requirements for institutional strengthening of responsible party should be stated. The complete set of recommended measures-in the management plan (EMP)- should also be presented in a summary table. Allocation of institutional responsibilities should be clearly specified. Whenever possible, mitigation measures that will be the responsibility of the construction contractor or O&M contractor should be formulated as contract clauses to be incorporated in the construction agreement. In addition, the government agency responsible for implementation and supervision should be identified. The Consultant should also recommend the composition of the neighborhood committee to supervise effective implementation of mitigatory measures.

Monitoring Plan: The Consultant should specify the types of monitoring needed for the potential environmental

impacts during construction and operation. As in case of mitigation plan, requirements should be specified as to what is to be monitored, how and by whom with clear delineation of responsibilities between the Special Purpose Vehicle (SPV), operator and state agency). Cost estimates are necessary and where monitoring reports are to be prepared, the recipient responsible for review and any corrective action should be identified. While formulating the environmental monitoring plan the Consultant should take in to consideration the environmental guidelines for road/ metro and highway projects by MoEF.

- **SOCIAL ASSESSMENT**

The Consultant shall identify major social issues due to land acquisition/ land transferred consequent risk, status of each issue, and outline mitigation measures including the details of people affected by the project and the means for their rehabilitation and its costs. The earlier environmental and social assessment report would be the guiding framework for undertaking the social assessment study. The social assessment study would have two parts: a general social assessment and a resettlement plan. It covers the following:

General Assessment: The general social assessment should be carried out through discussions with the appropriate government agencies, local NGOs and communities to bring out the following information and data:

a)Identifying all directly and indirectly affected stakeholders residing at/ near the land required for the proposed project sites and associated facilities.
b)Assess social benefits and risks due to the proposed facility
c)Define the characteristics of adversely affected people and the special needs of marginalized and vulnerable groups
d)Find out whether the proposed project separates the communities residing on either side and if so propose appropriate measures to address the difficulties created.
e)Identify whether any indigenous communities are adversely affected. If indigenous communities are going to be affected, an indigenous peoples development plan should be prepared to ensure that the adversely affected indigenous population benefits from the project activities and
f) Based on the findings of general social assessment, the consultant should interact with the team carrying out the technical study and should consider alternative design to minimize the resettlement needs.

Resettlement Action Plan: Development of RAP will comprise the following tasks.
Task 1: Collection of Socio Economic Data
In order to prepare a satisfactory RAP, a Socio economic survey is necessary to generate the required information. The data will be gathered using a variety of techniques such as household survey, information from secondary sources (i.e. land acquisition and compensation payment records), participatory appraisal, discussions with NGOs, Government Departments, local leaders and adversely affected communities. The following Socio economic data is

required.

(a)Identify all those people who are expected to lose various assets due to land acquisition by verification of land ownership

(b)Collect demographic and socio economic data for the population who is currently deriving livelihood or residing on the land. The data should include but not be limited to demographic characteristics, ethnic, tribe and cast composition, main forms of livelihood, income levels and sources, the way compensation money is normally utilized and preference for rehabilitation.

(c)During the survey, the types of adverse impacts based on the extent of disturbances should be categorized. These categories will form the basis of designing the entitlement and RAP according to the entitlement framework outlined in the ESR.

Task 2: Draft of Resettlement Action Plan: The information collected through the socio economic survey will form the basis for preparing a satisfactory RAP. The plan in particular should provide for atlas where applicable the following:

(a)Entitlement Package: To ensure that the standards of living of persons who are adversely affected are improved or at least maintained, the entitlement packages as spelled out in the ESR should be proposed. In proposing the entitlements, proper attention should be accorded to the types of loss and speedy recovery from the loss and adverse impact to be suffered. If any people are deriving the sources of livelihood due to customary use of acquired land, the entitlement package as applicable to customary right holders should be proposed in consistency with the provisions made in the ESR.

(b)Rehabilitation Measures: Consistent with the proposed entitlement package, the details of various schemes should be described. In case anybody losses his/her dwelling place, an alternative arrangement needs to be described. Community level committees should be formed to facilitate for public participation in deciding the resettlement sides and rehabilitation options for the Pas. The consultant should work through this committee to develop the RAP.

(c)Institutional Arrangements: Responsibilities for implementation RAP should be clearly delineated according to the institutional arrangements proposed in the ESR. Appropriate monitoring and evaluation arrangements as well as grievances and appeals mechanism should be evolved for effective implementation of the RAP. Various indicators that need to be used in that process must be clearly identified. The role of the committee, to be created to look after the various grievances related to the environmental and social issues in the implementation process of the RAP should also be outlined.

(d)Budget and Cost: The cost for each activity such as the payment of compensation amount and the replacement value, organizing economic activities, various allowances, costs towards implementation, monitoring and evaluation and all other anticipated costs should be spelled out. The budget for various activities as well as its funding need to be spelled out including this from programs currently being implemented by the Government and other agencies.

(e)Implementation: A time frame for implementation of the RAP is crucial in terms of providing linkages to civil

works. Therefore, a carefully drawn schedule, indicating the main actions and the responsible agency, needs to be prepared.

- **ENVIRONMENTAL MANAGEMENT PLAN**

The improved access to efficient public infrastructure necessitates synergy between prudent use of natural resources and meeting people's concerns. The overall goals are contribution sustainable development in and around the project locations.

The environment and social statement of the project has three cardinal principles:

1) Enhance the quality of life and environment in and around the project location, by

(a)Conserving natural resources
(b)Addressing the legitimate concerns of relevant stakeholders, specially project affected persons

2) Prevent adverse environmental and social situations by

(a)Minimizing the release of polluting wastes to amounts that do not harm the environment
(b)Preserving bio-diversity and ecological equilibrium by reducing pressure on natural resources
(c)Avoiding or minimizing resettlement due to land acquisition through appropriate technical and management measures
(d)Ensuring protection of marginalized and vulnerable groups, including the economically and socially disadvantaged, the elderly, women, children, physically handicapped and indigenous people.
(e)Minimizing health and safety hazards

3)Mitigate possible adverse environmental and social impacts, by

(a)Integrating waste management mechanisms and maintaining the environmental quality of the project locations
(b)Ensuring responsible resettlement and rehabilitation of project affected persons through sustainable livelihood options that at least restore, if not improve, their standard of living. Besides baseline surveys, other field observation techniques will be applied during the field investigations. Local representatives will also be consulted for their indigenous knowledge and to initiate them in the decision making process.
(c)Analysis of field observations: The environmental assessment team then carefully analises the field data, observations and consultation documents to select the preferred approach to mitigate the adverse environmental impacts of the projects. At this stage, the environmental assessment study team may also suggest other options for the project. This is referred to the project team before a decision is taken on the preferred mitigation measures for environmental impacts.

(d)Design the mitigation measures and action plans.

The environmental assessment team then proceeds to design the:

(a)Detailed Mitigation Measures to address environmental issues
(b)Implementation Monitoring Plan to clearly articulate a protocol for monitoring the suggested actions
(c)Institutional responsibility framework to allocate responsibility among the public and private agencies and other responsible for implementing the EMP.
(d)Risk allocation framework identifying the risks associated with not prudently undertaking the EMP, suggesting rick mitigation measures and allocation of probable liabilities
(e)Public disclosure and consultation: The mitigation measures and action plans are then made available for public review. These plans are discussed with the PAPs, Public Authorities and other stakeholders. A consensus is arrived at and any remaining differences of opinion are also documented.
(f)Finalization of environmental assessment report

Based on the public consultation and other feedback, the components of the EAR may evolve through several iterations before the document is finalized.
While enhancement is the first priority, incorporation of prevention and mitigation measures will ensure minimal adverse impacts.

Environmental Assessment Studies

1)Objective: This is the most important and substantive stage of the project. The key objective is to prepare a well researched and documented environmental assessment report with due consideration to public opinion and sensitivities.
2)Process: The entire is to be undertaken by the Consultant team with multi-disciplinary expertise. They will involve public and private agencies, NGOs, CBOs, PAPs, and local authorities as required. Appropriate stakeholder groups will be established to facilitate public consultation and participation.

(a) Participatory field investigations: Based on the TOR and scope of the environmental assessment studies the team will undertake field investigations for the following:

- Baseline survey of relevant environmental parameters (This will be undertaken applying appropriate sampling techniques for type, location and frequency of samples. Other field assessment techniques will be adopted depending on the level of detail required for each parameter)
- Prediction of the likely environmental impacts due to the project and evaluation of their consequences
- Identification of alternative measures to mitigate likely adverse environmental and social impacts

- Preliminary selection of preferred alternatives for mitigation of adverse environmental impacts

Social Assessment and Preparation of Mitigation Plans

1) Objective: This is the most important and substantive stage of the project. The key objective is to prepare a well researched and documented social assessment and mitigation plans with due consideration to public opinion and sensitivities. For projects in which World Bank financing is involved, the social assessment report and the mitigation plans (RAP and IPDP) will be prepared in accordance with the entitlement framework given below.

2) Process: The whole process is to be undertaken by a team to be constituted by the appointed social assessment Consultant. Besides experts like Sociologists, Anthropologists and community development specialists, the team will also have appropriate representatives of NGOs, CBOs, PAPs, and local authorities, as may be required. Appropriate stakeholder groups will be establishing to facilitate public consultation and participation.

a) Participatory field investigations: Based on the TOR and scope of the social assessment studies the team will undertake field investigations for the following:

●Identification of specific land acquisition requirements

●Determination of impact of project on the coastal living people, particulars fishermen.

●Baseline census of all project affected persons, including establishing cutoff date for entitlements, who are losing land or other assets, which results in relocation or adverse economic impacts

●Prediction of likely social impacts due to the project and evaluation of their consequences

●Identification of specific needs of marginalized and vulnerable groups like indigenous people

●Identification of alternatives for mitigation of adverse social impacts, including sites for resettlement, if any.

●Preliminary selection of preferred alternative for mitigation of adverse social impact

●In acse where the land acquisition process is completed, determination of those PAPs displeased and the manner in which they were resettled

This field investigation will be undertaken using a variety of techniques including baseline surveys, participatory appraisal, focus group discussions and planning and ethnographic studies using discussion with local leaders, knowledgeable local persons and community residents. During discussions with the community, alternative options for avoiding or minimizing displacement will be sought. These field studies will also ensure that the PAPs and project beneficiaries are fully involved in the decision making process.

b) Analysis of Field Observations: The social assessment consultant team will then carefully analyze the field data, observation and consultation documents to select the preferred approach to mitigate the adverse social impacts of the project. At this stage, the social assessment and management studies team may suggest other options for the project. This is referred to the project team before a decision is taken on the preferred mitigation measures to deal with adverse social impact.

c) Design of mitigation measures and action plans

- Resettlement Action Plan (RAP) to address the concerns of prject affected persons
- Indigenous people development plan (IPDP) for tribal communities to address specific concerns of marginalized and vulnerable groups
- Implementation monitoring to clearly articulate a protocol for monitoring the suggested action
- Institutional responsibility to allocate responsibility among the public and private agencies or community based organization responsible for implementation of RAP, IPDP, and also grievance redress and appraisal mechanisms
- Risk Allocation Framework to identify the risk allocation with not prudently undertaking the RAP and IPDP and to suggest risk mitigation measures and allocation of probable liabilities

d) Public Disclosure and Consultation: The mitigation measures and action plans designated are then made available for public review. These plans are discussed with the PAPs, public authorities and other stakeholders. A consensus is arrived at and any remaining differences of opinion are also documented.

e) Finalization of Social Assessment Report (SAR): Based on the public consultation and other comments, specific components of the Social Assessment Report (SAR) may evolve through several iterations before the document is finalized.

3) Output:

a) Several aspects of Draft SAR including

- Resettlement Action Plan (RAP)
- Indigenous People Development Plan (IIPDP) or similar modules as required
- Implementation Monitoring Plan
- Institutional Responsibility Framework
- Risk Allocation Framework
- Consensus on the Draft SAR

Detailed Project Report (DPR)

The DPR Submission shall consist of a package containing these volumes:

I Executive Summary
II Main Report
III Design Report
IV Materials Report
V Engineering Report
VI Drainage Design Report
VII Economic and Financial Analysis Report
VIII Environmental Assessment Report
IX Resettlement Action Plan (RAP)

Executive Summary

The Executive Summary shall include brief description on all aspects of the study.

Volume-I, Main Report

The report shall include

(i) Executive Summary giving brief accounts of the findings of the study and recommendations.

(ii) Main Report will present the project background, social analysis of the project, details of surveys and investigations carried out, analysis and interpretation of survey and investigation data, traffic studies and demand forecasts, designs, cost estimation, environmental aspects, economic and commercial analyses and conclusions.

(ii) Maps, charts and diagrams showing locations and details of existing features and the essential features of improvement and upgrading.

The basic data obtained from the field studies and investigations, and input data used for the preliminary design shall be submitted in a separate volume as an Appendix to the Main Report.

Volume - II, Design Report

This volume shall contain design calculations, supported by computer printout of calculations wherever applicable. The Report shall clearly bring out the various features of design standards adopted for the study. The design report will be in two parts.

Part-I shall primarily deal with the design of road features and pavement composition, Part-II shall deal with the design of bridges, stilt road, reclamation Road and cross-drainage structures etc.

The design report shall include detailed analysis for recommendations with regard to the proposals for rehabilitation, widening including shoulder composition and cross-sections, new bridges, cross drainage structures,

underpasses, overpasses, subways, and reconstruction of existing bridges, service roads, and road amenities in line with the description given above. The subsoil exploration report including the complete details of boring done, analyses and interpretation of data and the selection of design parameters shall be included as an Appendix to the Design Report.

The detailed design for all features should be carried out as per the requirements of the Design Standards for the project. However, there may be situations wherein it has not been possible to strictly adhere to the design standards due to the existing site conditions, restrictions and other considerations. The report should clearly bring out the details of these aspect and the standards adopted.

Volume - III, Materials Report

The Materials Report shall contain details concerning the proposed borrow areas and quarries for construction materials and possible sources of water for construction purposes. The report shall include details on locations of borrow areas and quarries shown on maps and charts and also the estimated quantities with mass haul diagram including possible end use with leads involved, the details of sampling and testing carried out and results in the form of important index values with possible end use thereof.

The Materials Report shall also include details of sampling, testing and test results obtained in respect physical properties of sub grade soils. The information shall be presented in tabular as well as in graphical representations and schematic diagrams. The Report shall present soil profiles along the alignment.
The material Report should also clearly indicate the locations of areas with problematic soils. Recommendations concerning the improvement of such soils for use in the proposed construction works, such as stabilisation (cement, lime, mechanical) should be included in the Report.

Volume - IV, BOQ & Cost Estimates

This volume will present the contract package wise cost of each item of work as well as a summary of total cost.

Volume - V, Rate Analysis

This volume will present the analysis of rates for all items of works. The details of unit rate of materials at source, carriage charges, any other applicable charges, labour rates, and machine charges as considered in arriving at unit rates will be included in this volume.

Volume - VI, Drawing

All drawings forming part of this volume shall be ‘good for construction’ drawings.

All plan and profile drawings will be prepared in scale 1:250V and 1:2500H scale to cover one km in one sheet. In addition this volume will contain ‘good for construction’ drawings for the following:
(i) Horizontal Alignment and Longitudinal Profile.

(ii) Cross-section @ 50m interval along the alignment within ROW
(iii) Typical Cross-Sections with details of pavement structure.
(iv) Detailed Drawings for individual Culverts and Cross-Drainage Structures.
(v) Detailed Drawings for individual Bridges, stilt roads, reclamation road details and Structures.
(vi) Detailed Drawings for Improvement of At-Grade and Grade-Separated Intersections and Interchanges.

Drawings for Road Sign, Markings, Toll Plazas, office-cum-residential complex for PIU, office establishment during the construction and other Facilities.

Schematic Diagrams (linear chart) indicating but be not limited to be following:
(i) Widening scheme;
(ii) Locations of median openings, intersections, interchanges, underpasses, overpasses, bypasses;
(iii) Locations of service roads;
(iv) locations of traffic signals, traffic signs, road markings, safety features; and,
(v) locations of parking areas, weighing stations, bus bays, rest areas, if any.

Preliminary Drawings for Bus Bays, Parking areas, Rest areas, and weighing stations. All drawings will be prepared in A2 size sheets. The format for plan, cross section and profile drawings shall be finalised in consultation with MCGM. The drawings shall also include details of all BM and reference pillars, HIP and VIP. The co-ordinates of all points should be referenced to a common datum, preferably, GTS referencing system. The drawings shall also include the locations of all traffic safety features including traffic signals, signs, markings, crash barriers delineators and rest areas, bus bays, parking areas etc.

The typical cross-section drawings should indicate the scheme for future widening of the carriageway. The proposed cross-sections of road segment passing through urban areas should indicate the provisions for pedestrian movements and suitable measures for surface and sub-surface drainage and lighting, as required.

Volume VII Environmental Assessment Report, including the Environmental Impact Assessment (EIA) and the EMP (Environmental Management Plan). Separate reports are to be provided for each key section of the project corridor.

Mode Of Payment/ Payment Schedule to Contractor:

Sr.No	Activity	Percentage of total amount	Cumulative Percentage of Total amount
1	Submission of Engineering Survey (Topography/Total station survey etc.), Geotechnical Investigation and any additional tests/changes etc., General Arrangement Drawing (GAD),detail feasibility report & acceptance by BMC	**1.00**	**1.00**
2	Traffic study and dispersal view considering PAP's, Land acquisition, minimum cutting of trees, effects of Draft D.P. 2014-2034 and effects of ongoing/proposed infrastructural projects by MMRDA, MSRDC, and Railway Projects etc. and its acceptance by the BMC, Detailed Design & Estimate, Finalization of DPR	**1.5**	**2.5**
3	Peer Review of detailed design &estimate will be carried out by BMC. After clearance from Peer review consultant for design &estimate, further Process will be initiated.	----	----
4	The design, specifications and final execution drawings of construction and its acceptance by the peer review consultant & BMC.	**1.00**	**3.5**
5	Environmental Impact Assessment and obtaining all regulatory clearances at the State and Union levels with their approvals.	**1.5**	**5**
6	Actual construction of bridge/tunnel and carriageway (subject to actual cost of work done and as per tender conditions) **Note:** The payment will be made after scrutiny &certification by Project Management Consultancy i.e. PMC in co-ordination with flowchart/bar chart submitted by bidder at various stages	**85**	**90**
7	To obtain any other allied NOC's during the progress of work and satisfactory completion of the work.	**10**	**100**

Section (B): (I)- Duties & Mode Of Payment to Project Management Consultant

Sr.No	Activity	Percentage of total amount	Cumulative Percentage of Total amount
1	Peer review of Engineering Survey (Topography /Total station survey etc.), Geotechnical Investigation and any additional tests/changes etc., General Arrangement Drawing (GAD), detail feasibility report & acceptance by BMC	**1.00**	**1.00**
2	Peer review of Traffic study and dispersal view considering PAP's, Land acquisition, minimum cutting of trees, effects of Draft D.P. 2014-2034 and effects of ongoing/proposed infrastructural projects by MMRDA, MSRDC, and Railway Projects etc. and its acceptance by the BMC, Detailed Design & Estimate, Finalization of DPR	**1.5**	**2.5**
3	Peer Review of detailed design & estimate acceptance by BMC.	-----	-----
4	Peer review of the design, specifications and final execution drawings of construction and its acceptance by BMC..	**1.00**	**3.5**
5	Peer review for Environmental Impact Assessment and after receipt of all regulatory clearances at the State and Union levels with their approvals.	**1.5**	**5**
6	Actual construction of bridge/tunnel and carriageway. It is PMC's responsibility to get done the actual construction work from Contractor as per approved design/drawings/BOQ in accordance with General Conditions of Contract (GCC), Special Conditions of Contract, Specifications & Selection of Material etc. **Note:** The payment will be made after scrutiny & certification of work done by contractor. The payment will be released in accordance with contractors bill payment.	**85**	**90**
7	To obtain any other allied NOC's during the progress of work and satisfactory completion of the work by the contractor and final certification by project management consultant.	**10**	**100**

(II) Time Schedule for Project Management Consultant (Excluding monsoon):

Sr.No	Activity	Time in Months	Cumulative
1	Peer review of Engineering Survey (Topography/Total station survey etc.), Geotechnical Investigation and any additional tests/changes etc., General Arrangement Drawing (GAD), detail feasibility report & acceptance by BMC	2	2
2	Peer review of Traffic study and dispersal view considering PAP's, Land acquisition, minimum cutting of trees, effects of Draft D.P. 2014-2034 and effects of ongoing/proposed infrastructural projects by MMRDA, MSRDC, and Railway Projects etc. and its acceptance by the BMC, Detailed Design & Estimate, Finalization of DPR	2	4
3	Peer Review of detailed design & estimate acceptance by BMC.	2	6
4	Peer review of the design, specifications and final execution drawings of construction and its acceptance by BMC..	1	7
5	Peer review for Environmental Impact Assessment and after receipt of all regulatory clearances at the State and Union levels with their approvals.	5	12
6	Actual construction of bridge/tunnel and carriageway. It is PMC's responsibility to get done the actual construction work from Contractor as per approved design/drawings/BOQ in accordance with General Conditions of Contract (GCC), Special Conditions of Contract, Specifications & Selection of Material etc. **Note:** The payment will be made after scrutiny & certification of work done by contractor. The payment will be released in accordance with contractors bill payment.	36	48
7	To obtain any other allied NOC's during the progress of work and satisfactory completion of the work by the contractor and final certification by project management consultant.	Till completion of work	-

(III) – Technical Committee of BMC:

All the survey reports, other related reports viz. General Arrangement Drawing (GAD), Detailed Project Report (DPR), Traffic Study reports, PAP & Land Acquisition reports, detailed design, execution drawings & estimates of work etc. and any other related necessary reports as submitted by Contractor and peer review reports of Project Management Consultant will be put up for approval to the BMC Technical Committee comprising of members i.e. Ch.E.(Roads), Ch.E.(Bridges), Ch.E.(D.P.), D.M.C.(Infrastructure), Director (E.S.&P) & two members from renowned Technical Institutes.

In case of any conflict / interpretation etc between PMC & contractor, the decision of Technical Committee/ AMC / MC shall be final and binding in this regards.

SECTION-8
BILL OF QUANTITIES

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BILL OF QUANTITIES

- **Appointed Contractor for the work will submit the Bill of Quantities.**
- Project management consultant should check the same as per approved design/drawings and submit the same with necessary modifications.

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SECTION- 9

CONDITIONS OF CONTRACT

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A. CONDITIONS OF CONTRACT

9.1 GENERAL PROVISIONS –

Definitions-

9.1.1 (a) The "Employer/Client " shall mean the Municipal Corporation for Greater Mumbai/Municipal Commissioner for Greater Mumbai, for the time being holding the said office and also his successors and shall also include all "Additional Municipal Commissioners, Director (Engineering Services & Projects)"/ Deputy Municipal Commissioner (Infrastructure), to whom the powers of the Municipal Commissioner, have been deputed under section 56 and 56-B of Mumbai Municipal Corporation Act.

(b) The "Contract" shall mean the Proposal and acceptance there of and the formal agreement if any, executed between the Contractor, Commissioner and the Corporation together with the documents referred to therein including these conditions and appendices and any special conditions, the specifications, designs, drawings, price schedules, bills of quantities and schedule of rates. All these documents taken together shall be deemed to form one Contract and shall be complementary to one another.

(d) The "Consultants" or ”Bidder” or ”Applicant” shall mean the individual or firm or company whether incorporated or not, undertaking the works and shall include legal representatives of such individual or persons composing such firm or unincorporated company or successors of such firm or company as the case may be and permitted as signs of such individual or firm or company.

(e) The "Engineer" shall mean the Chief Engineer / the Special Engineer, appointed for the time being or any other officer or officers of the Municipal Corporation who may be authorized by the Commissioner to carry out the functions of the Chief Engineer/the Special Engineer. "Engineer's Representative" shall mean the Deputy Chief Engineer/ the Executive Engineer, the Assistant Engineer and/or the Sub-Engineer/Road Engineer or any other municipal employee or employees appointed from time to time by the Commissioner to perform the duties set forth and generally to assist the Engineer for the purpose of the contract and whose authority shall be notified in writing to the Contractor by the Engineer.

(f) The "Corporation" or the Municipal Corporation" shall mean the Brihanmumbai Municipal Corporation, constituted under the B.M.C.Act.

(g) The "Annexure" referred to in these conditions shall means the relevant annexure appended to the Proposal papers issued by the Municipal Corporation.

(h) "Approved" shall mean approved in writing including subsequent confirmation of previous verbal approval and "approval" shall mean approval in writing including as aforesaid.

(i) “Specification" means the specifications referred to in the Proposal and any modification thereof or addition or deduction there to as may from time to time be furnished or approved in writing by the Engineer.

(j) “Letter of Acceptance" means the formal acceptance by the Employer of the Proposal.

(k) "Commencement Date" means the date mentioned in the work order issued by the Engineer.

(l) "Commencement Date" means the date mentioned in the work order issued by the Engineer

(m) Work order / Purchase order" means the formal letter to carry out activities as mentioned in scope of work in this contract. The payment shall be in accordance with mode of payment mentioned in this contract. It shall also include any amendment /deletion /addition of scope of work to any work order already issued and as communicated by Ch.E. (Rds. &Tr.) in writing.

9.2 COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

9.2.1 Effectiveness of Contract

This Contract shall come in to effect on the date the acceptance of the offer of the bidder is communicated to him.

9.2.2 Commencement of Services

The Consultants shall begin rendering his professional services fifteen days (15) after the date the Contract becomes effective, or at such Other date as may be specified in the acceptance letter.

9.2.3 Expiry of Contract

Unless terminated, this Contract shall expire when services have been completed till the end of defect liability period and all payments have been made at the end of such time period after the Effective Date as is specified in the acceptance letter.

9.2.4 Modification

Modification of the terms and conditions of this Contract, including any modification of the scope of the services or of the Contract Price, may only be made by written agreement between the Parties.

9.2.5 Force Majeure

9.2.5.1 Definition

For the purpose of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to war, riots, civil disorders, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action(except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.

Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Sub-consultants or agents or employees, not (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations here under.

Force Majeure shall not include insufficiency of funds to make any payment required hereunder.

9.2.5.2 The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

9.2.5.3 Measures to be taken

(a) A Party affected by an event of Force Majeure shall take all

Reasonable measures to remove such Party's inability to fulfill its obligations hereunder with a minimum of delay.

(b) A party affected by an event of Force Majeure shall notify the other party of such event as soon as possible, and in any case not later than fourteen (14) days falling the occurrence of such

events, providing evidence of the nature and cause of such event, and shall similarly give notice of the restoration of normal conditions as soon as possible.

(c) The parties shall take all reasonable measures to minimize the consequence of any event of Force Majeure.

9.2.5.4 Extension of Time

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as aresult of Force Majeure.

9.2.5.5 **Payments**

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultants shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

9.2.6 **Termination**

9.2.6.1 By the Client /B.M.C.

The Client may terminate this Contract, by not less than thirty (30) days' written notice of termination to the Consultants, to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause 9.2.6.1 and sixty (60) days 'in the case of the Event referred to in(e):

a) if the Consultants do not remedy a failure in the performance of their obligations under the Contract, within thirty (30) days of receipt after being notified or within such further period as the Client may have subsequently approved in writing;

b)if the Consultants become insolvent or bankrupt;

c)if, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

d)If the consultant, in the judgment of the Client has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution

"fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the

execution of a contract to the detriment of the client, and includes collusive practice among consultants (prior to or after submission of proposals) designed to establish prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

e)If the Client, in its sole discretion and for any reason whatsoever,decided to terminate this Contract.

f) If the Consultants become (or, if the Consultants consist of more than one entity, if any of their Members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;

g)If, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60)days.

9.2.6.2 Payment upon Termination

a) Upon termination of this Contract pursuant to Clauses 9.2.6.1, the Client shall make the following payments to the Consultants: Remuneration for Services satisfactorily performed prior to the effective date of termination

b) Except in the case of termination pursuant to paragraphs(a)and(b)of Clause 9.2.6.1,reimbursement of any reasonable costincident To the prompt and orderly termination of the Contract, including the cost of the return travel of the Consultants' personnel and their eligible dependents.

9.2.7 Payment procedure:

The consultants shall submit bill of the works carried out by them on a Work order basis.

The quantities quoted by consultants in their bill shall be verified by R.E and payment, as per actual quantities as measured on site, shall be paid.

Prior to requesting payment, consultant shall submit all detail reports, results, design, drawings etc in 2 CDs (softcopy) and two Printout (hardcopy).

Out of the amount payable to them, 5% amount shall be retained as "Retention Money" till satisfactory completion of work/DLP as per clause 6.9 (E) II or as decided by competent authority.

BMC shall be authorized to deduct all rebates, penalties, fines, recoveries, taxes, statutory charges /penalties /taxes payable to government bodies as deemed fit and as applicable from time to time from the payment payable to the consultants at any stage.

9.2.8 Penalties

a) If any lapse, such as, absenteeism of staff in plant, site & laboratory, non-submission of report within stipulated time period, giving non-factual information etc., in work of PMC is found, then penalty of Rs.5000/day/road. Penalty for not adhering maximum time given in time schedule shall attract a penalty of Rs.1000/day.

b) If major error is observed by MCGM in the design/estimate the consultant shall be liable for warning /penalty as deemed fit by Ch. Eng. (Rds &Tr.)

c) In case the delay is beyond the contract period, clause no. 8e of GCC-2016 will be invoked against the consultant. Further, if the total amount of such penalty exceeds10% of contract cost, then action as per Clause 8(f) of GCC will be initiated against the consultants.

9.3 OBLIGATIONS OF THE CONSULTANTS

9.3.1 General

The Consultants shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Consultants shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Client, and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub-consultants or third parties.

9.3.2 Consultants Not to Benefit from Commissions, Discounts etc

9.3.2.1 The remuneration of the Consultants shall constitute the Consultants' sole remuneration in connection with this Contract or the Services, and the Consultants shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Consultants shall use their best efforts to ensure that the Personnel, any Sub-consultants, and agents of either of them, similarly shall not receive any such additional remuneration.

9.3.2.2 Consultants and Affiliates Not to be Otherwise Interested in Project

9.3.2.3 Prohibition of Conflicting Activities

Neither the Consultants nor their Sub-consultants nor the Personnel shall engage, either directly or indirectly, in any of the following activities.

a) During the term of this Contract, any business or professional activities which would conflict with the activities assigned to them under this Contract; or

b) After the termination of this Contract, such other activities as may be specified in the acceptance letter.

9.3.3 Confidentiality

The Consultants, their Sub-consultants, and the Personnel of either of them shall not, either during the term or within two (2) years after the expiry of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Client's business or operations without the prior written consent of the Client.

9.3.4 Consultant's actions requiring Client's Prior Approval

The Consultants shall obtain the Client's prior approval in writing before taking any of the following actions:

a.Entering into a sub contract for the performance of any part of the Services,

b. Appointing such members of the Personnel other than those listed in proforma ("Key Personnel and Sub-consultants"), and

c.Any other action that may be specified in the acceptance letter/Work order.

9.3.5 Reporting Obligations

The Consultants shall submit to the Client the reports and documents in the form, in the numbers, and within the periods set forth.

9.3.6 All plans, drawings, specifications, designs, reports and other documents and software submitted by the Consultants in accordance with relevant Clause shall become and remain the property of the Client, and the Consultants shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Client, together with a detailed inventory thereof. The Consultants may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be specified in the acceptance letter.

9.3.7 Resolution of disputes:-

If any dispute, difference or claim is raised by either party relating to any matter arising out of the contract, the aggrieved party within a period of 7 days may refer to the concerned Addl. Municipal Commissioner who Shall constitute a committee comprising of three officers i.e. concerned D.M.C. or Director (E.S.&P.), Chief Engineer other than the Engineer of the Contract and concerned Chief Accountant. The Committee shall give its decision in writing within 60days.

Appeal from the order of the Committee may be referred to Municipal Commissioner within seven days. Thereafter the Municipal Commissioner shall constitute the Committee comprising of 3 Addl. Municipal Commissioners including Addl. Municipal Commissioner in-charge of Finance Department. The decision given by this Committee shall be final and binding upon the parties until the completion of the works, and shall forthwith the given effect to by the consultant who shall proceed with the work with due diligence, whether he requires arbitration as hereinafter provided or not. If the commissioner has given written notice of the decision

to the consultant and no claim to arbitration has been communicated within period of 90 days from receipt of such notice.

The said decision shall remain final and binding upon the consultant.

9.3.8 Consultant to offer best Prices:-

The consultant shall give undertaking in the format as included in this document, on Rs.500/-stamp paper, to offer the best prices and shall be liable for action/penalty as mentioned in the undertaking.

9.3.9 Consultant to comply with obligations under E.S.I.C & EPF & MP Acts:-

The tenderer shall have to submit the registration certificate under Employees Provident Fund and Miscellaneous Provision Act of 1952(EPF&MP Act 1952) and also have to submit registration certificate under Employees State Insurance Corporation Act 1948 if the no. of persons/ labourers on the establishment of tenderer/firm is 20 or more. If no.is less than 20, a notarized undertaking to that effect On Rs.500/-stamp paper shall be uploaded. In case the tenderer have Applied for registration, copy of application and its acknowledgement shall be uploaded.

9.4 Contract Documents and order of precedence:-

The documents forming the contract are to be taken as mutually explanatory of one another. Unless otherwise provided in the contract, the priority of the Documents forming the contract shall be, as follows:

1)Contract Agreement(if completed).
2)The letter of Acceptance.
3)The Bid.
4)Corrigendum and Addendum to Bid; if any.
5)Tender Document.
6)The Specification.
7)Standard General Conditions of Contracts (GCC).
8)All correspondence documents between bidder/contractor and MCGM.

9.5 Arbitration Clause:-

As per Hon‟ble M.C. „s circular vide no. MGC/F/8659dtd.07.09.2019, the Existing arbitration clause in the Standard General Conditions of Contract, Point no.13 (e) is now replaced and the same is as follows:

13.e)Arbitration and Jurisdiction

If the Commissioner fails to give notice of the decision as aforesaid within a Period of 90 days after being requested as aforesaid or if the Contractor is

dissatisfied with any such decision, then the Contractor may within 90 days after receiving notice of such decision or within 90 days after the expiration of the first named period of 90 days (as the case may be) require that the matter or matters in dispute be referred to arbitration as hereinafter provided.

(i) In case of a contract where the contract price and /or contract value is less than Rs.5,00,00,000/- (Rupees Five Crores Only), any dispute arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to a mutually agreed arbitral tribunal in accordance with the Arbitration and Conciliation Act, 1996 (amended upto date). The arbitral tribunal shall consist of a sole arbitrator, as mutually agreed upon by the parties and the said dispute shall be finally resolved by the said arbitral tribunal. The decision of the arbitral tribunal shall be in writing (with reasons) and which will be final and binding upon the parties here to and the expenses of the arbitration shall be paid as may be determined by the arbitral tribunal. The seat of the arbitration shall be Mumbai. The venue of arbitration shall be within the limits of BrihanMumbai. The language of the Arbitration shall be English. If the parties fails to appoint mutually agreed arbitral tribunal, within the period of 30 days from the date of application seeking arbitration in the dispute, the arbitral tribunal shall be appointed by the recognized arbitral institution i.e. Mumbai Centre for International Arbitration (approved by Government of Maharashtra under G.R.no. ARB/CaseNo.1,/2017/D-19 dtd.28.02.2017) as per the Arbitration Rules of the Mumbai Centre for International Arbitration then in force.("MCIA Rules")

(ii) In case of a contract where the contract price and / or contract value is Rs.5,00,00,000/- (Rupees Five Crores Only) or more, any dispute arising out of or in connection with such a contract, including any question regarding its existence, validity or termination, shall be directly referred to and finally resolved by the recognized arbitral institution i.e. Mumbai Centre for International Arbitration (approved by Government of Maharashtra under G.R.no. ARB/Case No.1,/2017/D-19 dtd.28.02.2017) as per the Arbitration Rules of the Mumbai Centre for International Arbitration then in force. ("MCIA Rules"). The arbitral tribunal shall consist of a sole arbitrator. The seat of the arbitration shall be Mumbai. The language of the Arbitration shall be English.

In either case, the law governing this arbitration agreement and the contract shall be Indian Law. The above clause is also applicable to the said tender work.

9.6 It is Project Management Consultancy's responsibility to get carry out the work from Contractor as per GCC in E-tender for the subject work.

9.7 Standard General Conditions of Contract for Construction works 2016 is applicable.

9.8 It is Project Management Consultancy's responsibility that after completion of work, to get done the rectifications if any from contractor by prior intimation to BMC, till the completion of Defect Liability Period of work.

SECTION-10

SPECIAL CONDITIONS OF CONTRACT

It is PMC's responsibility to get carry out the work from Contractor as per **SPECIAL CONDITIONS OF CONTRACT** in E-tender for the subject work.

SPECIAL CONDITIONS OF CONTRACT in E-Tender as below:

Note-The condition in this tender prevails

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 maybe 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 M.C.G.M. 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 tobe executed depending upon the site conditions. The tenderer shall not be entitled forany compensation on this account. Before starting the work, contractor shall consultwith 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 M.C.G.M. specifications/approved list wherever applicable.

10.9 BMC may appoint one dedicated, full-time QMA for achieving 100% supervision. QMAstaff, 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 shallextendfull-cooperationtosuchQMAstaff, BMC staff as directed by Engineer-in-Charge. The contractor shall carry out any survey; test etc. as directed and adverse decision thereof including rectification shall be carried out by the contractors at their cost.

10.10 **i)**All material required for the work can be stacked near the site of work in such manner so as not to cause any inconvenience to the pedestrian and vehicular traffic etc. If nospace 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 free of 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.dumped on 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/- (which ever is higher), perday/lapse/site work space, 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 showcause will be issued to the contractor at DyChE 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 finaldecision of disputes, difference of claims raised by the contractor or relating to any matterout 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, showingall 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.

10.12 a) 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 StationSurvey data provided in AUTO CAD sheets by Roads department. The updated roadprofile 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 M.C.G.M. approved asphalt plants only.

10.14 All the Paver blocks/Kerbstones/Watertables/Frame & covers required for the works to be carried out under the captioned contract shall be procured from the specified manufacturers registered with M.C.G.M. 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 manualsviz. 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, busstops,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 contract or 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 M.C.G.M. 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 contract or fortnightly.

"Contractor shall supply video CD/DVD alongwith 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 up to180 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 coloured 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 **<u>Price Variation</u>**–Deleted

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 submitted by the contractor to the official email id of concern Executive Engineer with detailed measurement in soft copy. Contractor shall hand over the hard copy of said with soft copy for the office record.

10.25 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.

10.26 All the excavated material belongs to the Brihanmumbai Municipal Corporation and therefore shallbe 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 materialis 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 desilted 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 arrange-ments 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 desilted 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."

10.27 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.

10.28 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.

10.29 All trenches taken in connection with the work should be sufficiently barricaded, asspecified.

10.30 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.

10.31 Site Office:

On receipt of the work order, the contractor shall have to provide a ready made site office in ward for M.C.G.M. 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/land. 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 area admeasuring 20 sq.m. (Minimum) with at least twowindows.

2. It should have hygienic toilet facility.

3. This chowky/Site office should be equipped with electric supply, latest version of PCs, one latest version of laptop with minimum 20" monitor, 16 GB RAM, 1 TB HDD, Wifi, 4G 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 / any other consultant/Quality control auditors if appointed by BMC as per requirement.

5. Any other equipment instructed by BMC staff.

6. 4-wheeler is in good condition air-conditioned vehicle arrangement along with driver round the clock with T-permit 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.

7. The contractor shall have his project office within BMC ward 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 6 above is not provided, penalty of Rs.1000/- per day/per item, will be imposed and it will be recovered.

10.32 Site Laboratory

Contractors shall set up one site laboratory in ward of size 3m X 10m (about 30 sq.m) minimum, easily accessible from work sites before commencement of work at their cost for

performing various tests and 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 bottlee 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 1gm 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 hotplate / 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 hotplate.
15. Equipment for testing of silt content in sand.
16. Infra Red thermometer calibrated up to 250 degree Celsius
17. Sieve shaker.
18. Kadappah stone platform of size 2.5 m.x 0.90 m. 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, sanitizer etc. for his staff and for bonafide use of BMC visiting site.

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 audit or if appointed by BMCand 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 cost so fall items in 10.31 & 10.32 above and 1% Labour cess and quote their % accordingly.

10.33 Tax:-

As per circular CA/F/Project/28 Dt.28.03.2023, The tenderer shall quote inclusive of all taxes other than GST (Excluding GST), levies, duties, cess etc. as applicable at the time of bid submission. GST as applicable shall be paid separately on submission of bills/invoice. Input tax, credit of GST as available with the bidder will not be claimed separately by BMC. However, while quoting the rates benefit of input tax, credit or exemptions shall be passed on to the BMC by way of equivqlent reduction in quoted price.

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

10.35 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.

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

10.37 All mild steel specials required for execution of work shall be fabricated from pipeson 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 thework.

10.38 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 watermain shall be flushed as directed.

10.39 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 any where 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.

10.40 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.

10.41 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.

10.42 Wherever mechanical joints will be used on the watermain 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.

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

10.44 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 10 Cu.m.

10.45 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 waterbound layers on site.

10.46 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 watermains upto10 kg/cm2 pressure as directed by the engineer.

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

10.48 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.

10.49 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.

10.50 The M.S. Pipes shall be manufactured from plates confirming to IS 2062:2006 (orlatest 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 10^{th} welding joint of mild steel pipe watermain shall be tested in metallurgical laboratory for its strength.

10.51 The contractor has to provide Vernier calliper, micrometer and digital instrument for measuring thickness of pipe/ferrule etc.

10.52 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.

10.53 The tenderer shall remove the water, filled for hydraulic testing of the newly laid watermain/watermain 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.

10.54 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.

10.55 After completion of work, contractor has to submit detail location of work with three reference point and also of water main laid.

10.56 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.

10.57 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.

10.58 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.

10.59 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 M.C.G.M at the risk and cost of the tenderer. After testing of water main, same shall be handed over to competent authority of

M.C.G.M / A.E.W.W of respective wards / A.E.W.W (Maint) by the tenderer as directed.

10.60 The rate of supply, loading transporting on site, unloading & lowering in trenches ofall 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.

10.61 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 cir- cumstances.

10.62 No core cut sample will be allowed in case of asphalt mix.

10.63 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 uponsubmission of final bill.

10.64 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 M.C.G.M. during execution of the work. All the observations, instructions made by the quality management agency & confirmed by M.C.G.M staff will be binding on the contractor & they should be complied accordingly by the contractor.

10.65 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 necessaryto 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 resched-uled as directed.

10.66 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 shallbe paid at actual.

10.67 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 M.C.G.M at the risk and cost of the tenderer and recoveries shall be effected from the dues payable to the tenderer.

10.68 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.

10.69 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.

10.70 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 constraintin mind.

10.71 Details of recovery of existing sluice valve replaced by the contractors in the tenderwork are:

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

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

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

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

10.73 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 fromDMC (SE). However, if the items are not available in HE's schedule those item will be paid as per the items of other MCGM Schedule of rates & as stipulated in the relevant clause of G.C.C. If the items are not available in any of the M.C.G.M. schedules, then fair rate will be prepared asper prevailing market rate with 15% contractors profit inclusive of overheads and duly got veri-fied by Account Office. For fair rate approval from DMC (SE) shall be obtained before execu-tion 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 rein- stated 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 re-instatement 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.

10.74 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 / concernedM.C.G.M 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 re- sponsibility for which the required help will be provided by M.C.G.M. 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.

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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.

10.75 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 MCGM 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 madeon this account.

10.76 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.

10.77 IDLE CHARGES:

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

10.78 **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.

10.79 **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.

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

10.81 -Deleted

10.82 MCGM may be appointing Road Design Consultants and bids for the same are in progress. Once these consultants are appointed the roads considered for improvement in the above bids will be designed by these consultants and the BOQs may be modified as per the design submitted by those consultants. It is also possible that proposed mode of construction may change from Cement Concrete to Asphalt to Concrete or any other material/methodology.

The interested bidders have to inspect all sites & acquaint themselves with the siteconditions. BMC has invited tender for appointed of Road Design Consultants for utilityducts design, utility ducts with Pavement design and pavement design. The RoadDesignConsultants will be appointed in due course of time and the design will be avail-able innear future. The work identified in the scope of this tender will also be assigned to the qualified, eligible bidder/agency. 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 at any stage. All bidders to note this and quote accordingly.

10.83 ArbitrationClause:-

This office is in receipt of orders of Hon. M.C u/no. MGC/F/8659 DATED 07.09.2019 regard- ing amendments in arbitration clause of the Standard General Conditions of Contract for Con-struction 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 havenoted and agreed to the same.

10.84 Deleted.

10.85 **Subletting:-** Subletting of work wil lnot be allowed for this tender as per circular n/no. Ch.E./248/SR/Rds&Tr.Dated05.08.2019.

10.86 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 ex-tension will be granted on merits as per provision of Prevailing SBD provisions.

10.87 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 shallbe provided in auto CAD sheet and SHAPE files, to the Engineer in charge.

10.88 Scanning of Records:

Bidders should note that contractors shall submit scanned copies of updated records, in the formof C.D., along with submission of each Running bill/Final bill.

10.89 Riding Quality:

1) It will be 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 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 usinga 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, extracare 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 PWDregarding 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 fifthwheel Bump Integrator or laser profilometer or any similar advanced instruments as advice 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: 2000 mm/km

ii) For C.C.Surface: 2200 mm/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 ofroad/ 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 our 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) Itis 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 incase of 5 years DLP**.**

c) It is mandatory to carry our 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.

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 quanlity 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 MCGM 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.

10.90 **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.

10.91 **DLP Period for refund of Contract deposit ~~and performane eguarantee:~~**

In GCC condition 5.f.v, the maximum **"Defect Liability Period"** of any part of the work shallbe considered for refund of "Contract Deposit and Performance Guarantee."

10.92 **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.

10.93 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.

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

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

10.96 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.

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

(a)CAF/Project/21dt.07.09.2020,

(b)CA(F)/Project/32of26.10.2020,

(c)CA(F)/Project/36dt.07.12.2020,

(d)CA(F)/Project/41dt.09.02.2021,

(e)CA(F)/Project/42dt.09.02.2021

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

10.98 EMD shall be paid online at the time of bidding and the submission will be insisted as per SBD conditions. All other deposits will have to be deposited in the form of

Demand Draft (**D.D**) Only, as per prevailing SBD conditions.

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

SECTION -11
SPECIFICATIONS & SELECTION OF MATERIAL

It is PMC's responsibility to get carry out the work from Contractor as per **SPECIFICATIONS & SELECTION OF MATERIAL** in E-tender for the subject work.

SPECIFICATIONS & SELECTION OF MATERIAL in E-Tender

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.inunder the Tender tab. Hence the deserving contractorshall 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. 80% tests at Municipal testing lab and remaining 20% tests will be allowed only at reputed govt. labs likely IIT/VJTI/SPCE/MSME/National Test House (W.R.) /Govt. Lab only.
2) The testing at private labs 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 (700mmx150mmx150mm) for flexural strength of 28 days shall also be cast & tested, for every day's work in the BMC testing laboratory/Govt. Approved laboratory.
5) Besides, once in a month, compressive strength for 7, 14 & 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 30ºC will not be allowed.

11.2 During night time the contractors shall make necessary arrangement for aequate 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 re- sistance, 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 it's use, as per the directions of the site in charge. In case, the test results arenot available before its use, the use of the materials shall be permitted on the explicit under-standing that they will remove and re do the work at their own cost in case the specimens fails 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 suita- ble 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 contractors 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 HOMOGENOUSS OIL SUBGRADES

CBR value (%)	2	3	4	5	7	10	20	50	10
K-Value (Kg/cm3)	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 three 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.) M.C.G.M. 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 two 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/ EE. 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 least100 mm 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 multiplyingwith the correction factor obtained from the following equation : -

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 pro- gramme submitted in the form of BAR chart or PERT/CPM, considering the permission ob- tained 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 mini- mum cement content is not sufficient to produce the strength of concrete specified in the draw- ing/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 resulted 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 Engi- neer.

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

28. 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 centreline 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 approvedquality for half the length plus 25 mm for expansion joints. The sheath shall be tough, durableand 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.

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

30. 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. Itshould 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 tillthe lean concrete is overlaid by M 35 & above C. C. slab, whichever is earlier, but for a minimumperiod of 24 hours.

31. 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.

32. For the desired workability, the ready mix concrete of M 35 & above will have a slump not more than 50 +/- 10 mm.

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

34. 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 ad- dition to the with needle and plate vibrator.

35. 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 ob- served on the surface of the concrete, fresh concrete shall be spread on the top, surcharged andgot 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.

36. 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.

37. 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 platevibrator, screed vibrator and at least three needle vibrators in working condition.

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

39. 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 imme- diately.

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

41. 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.

42. 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 wiresgrouped 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.

43. 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 betaken 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 5measurements	1.00	+0.25 -0.35

44. After the application of the brushed texture, the surface of the slab shall have a uniform appearance.

45. 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 retexturingthe hardened concrete surface in an approved manner.

46. 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 rectifiedas 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

47. 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 con- creted 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 brushedsurface 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 vatas. A penalty of Rs.10,000/- per day will be levied for improper curing.

48. 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

per- fectly 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.

49. 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

50. 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.

51. 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 allow-ing traffic on C.C. slabs.

52. 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 costand 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.

53. 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.

54. The machine cut joints and expansion joints must be cleaned first by using Raking tool andthen 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.

55. 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 anyvatta impression and without damaging the surface texture of the slab.

56. 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. `Specifica- tions 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 batchin 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 sealingcompound, 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 compoundwill 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 15-2002 Standard Specifications & Code of Practice for constn. of Concrete Roads.
ii) IRC 57-1974 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 sealingcompound as per the specification for sealing of joints in rigid pavements. The spilled over sealing compound if any shall be removed immediately.

57. 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 theedge 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.

58.If deemed necessary by the Engineer, any section of the slab which deviates from the speci-fied levels and tolerance shall be demolished and reconstructed at the Contractor's expense.

59.There shall be a defect liability for as mentioned in Annexure 'A' for C.C. pavement. If during this 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 theC/s. In case of development of structural/full depth cracks, 25% cost of the slab per cracked panel shall be recovered as penalty. The penalty amount shall not exceed cost of respective slab.However, for cracks in M.H. bays, entire cost of M.H. bays shall be recovered. If the contractorsreplace the cracked panels within time and within the guarantee period, the said amount shall bepaid separately. It is obligatory on the part of contractors to take care of such cracks during theguarantee period. During the defect liability period, dressing of joints complete in all respectshall have to be done free of cost at least once in a year preferably in the month of April or May or 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.

60.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 MCGM.

61.If any contractor fails to carry out work, the same will be got executed at his risk and

cost, through other agencies.

62.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.

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

a) Every transi tmixer 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 com-puterized sheet shall be signed by the site in charge and contractor's representative and shall bepreserved as a record on the site. The batch report sheet of the Concrete material shall be sub- mitted with challans daily.

64.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 flakesin concrete. The Pavement Temperature of Pavement Quality Concrete should not exceed 30˚C at the time of pouring.

65.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.

66.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, fol- lowing 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 thesecond 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 specifiedslump is 50 mm while carrying out above tests, it may vary by 10 mm.

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

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

69.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.

70.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.

71.LIST OF EQUIPMENT REQUIRED TO BE PROVIDED BY THECONTRACTORS FOR CEMENT CONCRETE ROAD WORKS.

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 twospare 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 farmas for raising manholes.
12. Portable air compressor.
13. 2 templates for checking camber
14. 20 cube moulds, 150 mmx150mmx150mm
15. 1slump cone with two additional measuring rods.
16. Diamond Cutter.
17. Two joints raking tools.
18. 6 flexural beam moulds of size 700 mm x150mm x150mm
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 pharmas.
24. a)Measuring tape,b)Stee ltape
25. Generator Set–Min. One no.
26. Digital Thermometer–Two Nos.
27. Wooden Platform–Two Nos.

These are only indicative quantities. Contractor must procure all the aforesaid equipment and machinery before commencement of the respective work in good working condition.

72.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 recommended as 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 haveCBR 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 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 flushed 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, preparationof 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 ± 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.

11.5 A 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. 80% tests at Municipal testing lab and

(ii) Remaining 20% tests will be allowed only at reputed govt. labs likely IIT/VJTI/SPCE/MSME/National Test House (W.R.) /Govt. Labonly.

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

(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 bythe 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 shallbe 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 tmix, 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 legibleduplicate 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.)'soffice.

(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 waxcoatedpacking orsealedairtightbags.

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 5th day to 7th day from date of laying of asphalt mix on site	Rs. 10,000/-
B)	From the 8th day to 14th 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/marshal 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 labor-atory 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 al lnuts 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 interfere with the proper paving of the unit or impair the strength or performance of the pavement constructed 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 submitted 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 thickness as specified in the IS. The thickness of the wearing layer shall be measured at several points along the periphery of the paver blocks. The arithmetic mean of the lowest two values shall be the minimum thickness of the wearing layer.

Water Absorption -

The water absorption, being the average of three units, when determined in the manner described 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.

Tensile Splitting Strength Test

Sr. No.	Thickness of Paver blocks	Grade of concrete	Minimum Tensile Splitting strength in Mpa	
			Individual	Average
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 ≤ 20,000 mm^3 /5000 mm^2 (Indi-vidual) and < 18000 mm^3 / 5000 mm^2 (Average), respectively.

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

ii)	M-35	fck + 0.825 x established standard deviation (rounded off to nearest 0.5 N/mm^2)
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.Maintaining the kerbs, dividers, jointing etc. With proper painting thrice in year pref- erably 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.

2. All road side furniture shall be inspected, restored/painted to original condition.

3. Surface deteriorations shall be rectified.

4. Paver blocks- the undulations in the paver blocks, settlement of paver blocks, broken pieces of paver blocks shall be rectified /replaced as directed.

5. The contractors shall not allow any trenches on the roads under project work without due permission from concerned authority of MCGM.

6. Cleaning and maintaining of laterals and water entrances of storm water drains including replacing missing/broken covers on improved roads till completion of project.

7. 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 be repaired /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 M.C.G.M.

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 of instructions 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 utility etc. 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/ directedby 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 also4 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 notingthe defects and rectification of such defects shall be carried out by the contractor failing compli-ance, 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 :–

List of Registers	
Register Code	**Name of Register**
1.	Inventory Register
2.	Daily Progress Register
3.	Instruction Register
4.	Level Book
5.	Mix design file
6.	Material Testing Result file
7.	Photograph file& video CD
8.	Excavation Register (Asphalt, rock, soil etc)
9.	Filling/Embankment Register
10.	G.S.B. Register
11.	W.M.M. Register
12	Sand Metal Filling Register
13.	D.L.C. Register

14.	Duct Pipe /Lateral Register
15.	Steel Register
16.	Form Work Shuttering Register
17.	Pour Card Register
18.	Various RMC (M10, M15…..M60 etc.) register
19.	M 10, M15,M20,M25, M35/M40 Cube registers
20.	R.M.C. Challan file
21.	Asphalt Mixes (BC, BCWP, DBM, BM, SC etc)Register
22.	Bituminous concrete Register
23.	Bituminous material challan file
24.	Penalty Register.
25	Sand Patch test Register.
26.	RFI file
27.	Any other registers required as per description of items for any activity / ma-terial / quantity for which payment is made or as instructed by M.C.G.M engineer incharge.

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 submit the scanned copies of above updated records in form of C.D. as well as the hard copies along with submission of each R.A. bill as per circular u/no.Ch.E./248/SR/Rds&Tr dated 05.08.2019.

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 the Site In charge of MCGM (Sub Engineer) mentioning date, chainage and relevant particulars etc. for inspection before commencement of subsequent activity. MCGM 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).

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 thanM40 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 propercorrecting 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 toping 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; improve 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 concreteis normally preferred. The asphalt pavement shall be evaluated by examining pavement deficiencies (excessive deflection/bending of layers) using Benkelman Beam or any other suitable 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 ($\pm$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 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 stoneas 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 1/3rd 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 atleast 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 bath 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

	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 con-crete	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

	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 com-pound		IS: 1834 of 1984	--do---
10/20 Grade Bitumen	Physical		--do---

DURING CONSTRUCTION

:MATERIALS :

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

Item	Test	Control Criterion	Frequency
CONCRETE			
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.
DOWEL BARS			

Alignment (being in a plane parallel to the surfaceof the base course and be- ing also parallel to the cen- ter line of the slab).			Each dowel bar, after fixing in position.
TIE BARS			
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 clothand 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 $\pm$ 4.5 mm

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 evenness	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"
Strength	"Characteristic strength for cubes tested at the age of 28 days analyzed for complete work to exceed the specified strength". Individual 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).	Before the end of the defect liability period, the site will be jointly inspected along with the contactor's representative/ Engr. & defects observed will be listed & the necessary rectification will be carried out as directed by Ch Engr. (C.C. Roads & Tr.) in accordance with the relevant specifications & clauses mentioned in Special Directions/ Conditions to the Tenderers.

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 fluc-tuations moreover, even during fair-season the Nallas/S.W.D carry appreciable quantity of sul-lage. 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

asand 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 madeeither 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 transportto 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 pos-sible for the contractors to stack excavated material required for back filling after completion ofthe 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 prismoidal Formula. For establishing the datum line, the average of the two end

points 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 M.C.G.M. 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 M.C.G.M. 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 exe-cution 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 sub grade.

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 man-ufacturers

(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 be-yond 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 usedin 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 test-ing. All B bills, vouchers and test certificates, which in the opinion of the Engineer or his repre-

sentative 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 ie item no R2-RW-10-63 will be recovered as penalty.

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SECTION-12
FRAUD AND CORRUPT PRACTICES

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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 Appli- cant 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 respec-tively 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 relavant 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, finan- cial 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 BiddingProcess;

D. **"undesirable practice"** means (i) establishing contact with any person connected with or em- ployed 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 inthe 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 employeeshall 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 Financer staff and em- ployees of other organizations taking or reviewing procurement decisions.

iii. “fraudulent practice” is any act or omission, including a misrepresentation, that know- ingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or otherbenefit 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 aparty;

vi. vi. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede the Financier investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party toprevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing 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.

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SECTION- 13
PRE BID 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 pro- duction 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 e-procurement system of Government of Maharashtra (Mahatenders) (http://mahatenders.gov.in) & 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 canbe 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.

ListofapprovedBanks:-(PleasereferCircularu/no.FBK-25dtd.30.10.2014) & CA/FBK/241 dt.27.11.2019.

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

FORM OF TENDER

To,

The Municipal Commissioner for Greater
MumbaiSubject: 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 Municipal Corporation of Greater Mumbai asamended 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 con-tract 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 toRs._____ _____)

I/We have deposited the amount through online payment gateways with the C.E. of the Corporation not tobear 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 be- fore 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 condi- tion 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 tothe Corporation.

6. I/We agree that the Corporation shall, without prejudice to any other right or remedy, be at liberty to forfeitthe 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 Bom-bay 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 incor-rect 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 Municipal Corporation of Greater Mumbai 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 compen- sation for cancellation of the contract given to me/us or any work assigned to me/us or is with-drawn by theCorporation,"

Address Yours faithfully,

…….

……..……

Digital Signature of the Tenderer or the Firm

1…….

2…….

3…….

4…….

Full Name and private res-idential address of all the partners constituting theFirm

A/c No.

…. …….

1. …….. Name of Bank

2. …….. ……

3. …….. Name of Branch

4. …….. …….

5. …….. Vender No. ……

AGREEMENT FORM

Tender / Quotation dated.....20…

Standing Committee/Education Committee Resolution No. ……..…….

CONTRACT FOR THE WORKS …….……...……...…… ……

This agreement made this day of …… ……. …… ……

Two thousand ……...…..……..……..……

Between ……...……...…….……..……

inhabitants of Mumbai, carrying on business at…… ……...…..…… …… … ……..……

in Bombay under the style and name of Messrs ……...…… ……..…… (Hereinafter called "the consultant of the one part and Shri …… ……..……..…….

the Director(E.S.&P.) (hereinafter called "the commissioner" in which expression are included unless the in-clusion is inconsistent with the context, or meaning thereof, his successor or successors for the time being holding the office of Director (E,S.& P)of the second part and the Municipal Corporation of Greater Mumbai (hereinafter called "the Corporation") of the third part, WHEREAS the consultant has tendered for the con- struction, completion and maintenance of the works described above and his tender has been accepted by the Commissioner (with the approval of the Standing Committee/Education Committee of the Corporation NOW THIS THIS AGREEMENT WITNESSETH as follows:-

1) In this agreement words and expressions shall have the same meanings as are respectively assigned to themin the General Conditions of Contract for works hereinafter referred to:-

2) The following documents shall be deemed to form and be read and constructed as a part of this agreementviz.

a) The letter of Acceptance

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 MCGM

3) In consideration of the payments to be made by the Commissioner to the consultant as hereinafter mentioned the consultant hereby covenants with the Commissioner to complete Road Consultancy Services in conformity in all respects with the provision of the contract.

4) The Commissioner hereby covenants to pay to the Consultant in consideration of giving complete Road Consultancy Services for the works mentioned herein, 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 consultants

_____ _____

In the presence of

Trading under the name and style of

Full Name

Address Consultants

Signed by the Director (ES&P) in the presence of Ex.....City/ WS/ ES

_____

_____

Director (ES&P)

The Common seal of the Municipal Corporation of Greater Mumbai 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: ***REQUEST FOR PROPOSAL (RFP)For Selection of 'Project management Consultant' ForPeer Review of Feasibility Report, Draft Project Report (DPR), Design & Drawings, Estimates/Bill of Quantities, validation, Construction work supervision, Quality Assurance, Quality Control & Quality Audit For work of "DESIGN & BUILT, TURNKEY CONTRACT FOR DEVELOPMENT OF 18.30 M D.P. ROAD (PHASE-I) FROM MALAD HILL RESERVOIR TO APPAPADA CONNECTING LOKHANDWALA COMPLEX IN P/N WARD (CONSTRUCTION OF CONCRETE BRIDGE/ STEEL BRIDGE/TUNNEL AND CEMENT CONCRETE CARRIAGEWAY (18.30 M WIDTH) ALONG 36.60 M D.P.ROAD)"***

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~~	~~Unit.~~	~~Total Amount Rs.~~	
			~~In Figures~~	~~In Words~~
~~1~~	~~.....~~	~~------~~	~~-------~~	~~--------~~
	~~**Total Amount**~~			

3.)

Earnest Money (Lumpsum)	**Rs 2,00,000/-**(90% EMD to be online and 10% EMD to be paid physically in form of DD/Cash by obtaining required challan from Dy.Ch.E.(Roads) W.S. office and submit to any CFC). Receipt of the same shall be submitted to this office before opening of Packet A&B.

4.)Time Period:- 48 Months (Excluding Monsoon)

5.) The DLP for construction work shall be as below :

DEFECT LIABILITY PERIOD FOR VARIOUS ACTIVITIES	1.) For Cement Concrete road work having thickness 280 mm and above & RCC tunnel :10 years. 2)Mastic Asphalt work with full crust: 5years. 3)For Asphalt Work with full crust: 3 years 4)Paver blocks:3years 5) C.CPassage/side strip in CC passage /UTWT/TWT road:5 years. 6)Resurfacing in Bituminous Concrete or Mastic asphalt:2 years 7) Joint sealing works: 3 years. 8) Footpath in stencil/stamped concrete:3 years 9) Reinstatement of trench: As per D.L.P. of reinstated trenches or Balance D.L.P. of road work whichever is later. 10) Painting of Kerb stone, divider, lane markings/arrow markings/zebra crossings, road signs, road side furniture, etc.:2 years. 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. 11) Dlp of SWD pipe drain/Box drain/Culvert/Nalla construction: 3 Years. 12) Any other work not specified above–3 Years.

The DEFECT LIABILITY PERIOD of the entire work shall be the DEFECT LIABILITY PERIOD of the individual activity of the work having maximum period.

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 upto 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 upto 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 upto date.

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

Annexure-B

<UNDERTAKING FOR BEST PRICES ON RS 500/-STAMP PAPER>

"I/We._____

(full name in capital letters, starting with surname), the Proprietor/Managing Partner/ Managing Director/ Holder of the Business/Manufacturer/Authorized Dealer, for the establishment/firm/registered company, named herein below, do hereby undertake that we have offered the best prices for the subject supply/work as per the present market rates and that we have not offered less prices for the subject supply/work to any other outside agencies including Govt/Semi-Govt. agencies and within the BMC also. Further, We have filled in the accompanying tender with full knowledge of the above liabilities and therefore we will not raise any objection or dispute in any manner relating to any action, including forfeiture of deposit and blacklisting, forgiving any information which is found to be incorrect and against the instructions and directions given in this behalf in this tender.

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 what so ever, I/We agree and undertake that I/We shall not claim in such case any amount, byway of damages or compensation for cancellation of the contract given to me/us or any work assigned to me/us or is withdrawn by the Corporation."

Signature of Tenderer/Bidder

Annexure-C

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 MCGM, 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 MCGM or otherwise in procuring the Consultant forbearing to door 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 disfavor 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

Intermedia ries 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 on to 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. Not withstanding anything to the contrary contained herein, the Authority may reject an Application without being liable in any manner what so ever 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 hereinafter 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-D

(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 and Corrigendum as applicable, 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, MCGM 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 ont he 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-E

Irrevocable Undertaking

(on Rs.500/-Stamp Paper)

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 171of CGST Act, 2017, any reduction in rate of tax on supply of goods orservices 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 incase the same is not passed on and is discovered at any later stage, BMC shall be at liberty to in-itiate 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 herein above is true & correct to my/our own knowledge & belief.

Solemnly affirmed at DEPONANT

This day of BEFORE ME

Intereted 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

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 ofwork 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.

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PROFORMA-II

Yearly turnover of Consultancy Works during the last five years.

NOTE: The above figures shall tally with the audited balance sheets uploaded by the tenderers duly certifiedby Chartered Accountant.

PROFORMA-II					
Sr.No.	Financial year	Annual Turnover of Consultancy	Updated valueto current year	Average of last 5 years	Page No.
1					
2					
3					
4					
5					
Total					

PROFORMA-III

At least similar work, as stated in Clause '2.1' of Post qualification.

PROFORMA-III							
Name of the Project	Name of the Employer	Cost of theProject	Date of issue of work Order	Stipulated Date of Completion	Actual Date of Completion	Actualcost 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**	
		Prime Candidate/Alternate		**No.of years**	**Name of Projects**
1.	Sr. Bridge Engineer				
2.	Structural Design Engineer				
3.	Geotechnical/ Soil Engineer				
4.	Safety & Security Specialist				
5	Contract Specialist				
6	Legal Expert				
7	Sr. Highway Engineer/Transportation Planner				
8	Environmental Expert				
9	Team Leader				
10	Team Co-ordinator				

11	Quality Engineer				
12	Plant Engineer				
13	Site Engineer				

Note: Scans of Original qualification certificates and original work experience certificate shall be submitted/uploaded.

Proforma-IV (A) Support Staff:

Position	Name of the person proposed	Qualification	Experience	Task Assigned

~~**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							
Descrip-tion of work	Plac e	Contrac tNo. & Date	Name & Address esof em-ployer	Value of Contract inRs.	Schedule d date of completio n	Value of work remain-ing to be completed	Anticipate dDate of completio n
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						
Descriptio nof work	Plac e	Name & Addresse s of employee	Value of Contract inRs.	Time Pe-riod	Date on which decision is ex-pected	Remar ks
1	2	3	4	5	6	7

PROFORMA-VII (LitigationHistory)

PROFORMA-VII (Litigation History)				
Other Party	Employ er	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 workshall be annexed.

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 MCGM 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 copyof the circular along with his bid submission as token of acceptance.

Sr.No.	CircularNo.	Circular related to
1	CA_FRT_12dated21.06.2012	Labour Cess
2	CA_Finance_project_city_17dated 06.09.2017	Anti-Profiteering, GST
3	MGC-F-6342dated05.05.2018	Barricading
4	DMC_CPD_3217dated02.03.2019 & Ch.E.(V)/436/P of 18.05.2023	Grievance redressal Mechanism
5	Circularu/no.Dy.Ch.E./SWM/3957dtd. 28.09.2018	SOP of construction & Demolition waste Management Rules 2016
6	DMC_SWM_4677dated12.02.2019	Implementation of construction & Demolition Waste management Rules 2016
7	CAF_10318dated24.03.2022	Legal and stationery charges circular
8	AMC/ES/7725/IIdtd.18.12.2014	Trench Policy guidelines
9	AMC/ES/9923/IIdtd.20.07.2015	Trench Policy guidelines
10	Ch.E./1165/Rds/MCdtd29.07.2016	Trench Policy guidelines
11	MGC/F/4255dtd.10.08.2017	Policy of Trenching ongoing project roads
12	ChE_637_SR_RoadsandTrdated 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/IIIdated31.12.2019	Proposed Accidental compensation policy
15	MGC_F_8659dated07.09.2019	Modified Arbitration clause circular
16	CA/FBK/241dtd.27.11.2019	Approved list of banks
17	ChE-8412-Rds&Trdt.02.02.2019	Guidelines for construction of Footpath
18	DyChE_8696_SWD_WSdated 16.07.2020	Standard SWD Drain sections
19	CA/FBK/303Dt:17.03.2018	IDBI bank BG not Valid
20	DMC/Infra/1315dated25.06.2021	No FRP Cover Circular
21	AMC/P/7909 dtd. 05.01.2022	Provision of Utility Duct
22	CA/F/Project/28 Dt.28.03.2023 & CA(F)/FRT/31 Dt.29.11.2017	Applicability of GST
23	CA/FRG/03 Dt.11.05.2023 & CA/FRG/4 Dt.25.05.2023	Tender Fees/Scrutiny Fees

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)

SECTION-17
DRAWING

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