

BRIHANMUMBAI MUNICIPAL CORPORATION

HYDRAULIC ENGINEERS DEPARTMENT



e-TENDER FOR

Name of Work: - Work of operation and comprehensive Maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division.

STANDARD BID DOCUMENT

Website : portal.mcgm.gov.in/e-tenders

**Office of : Deputy Hydraulic Engineer (Maint.)
Municipal water works yard,
Lal Bahadur Shastri Marg,
Ghatkopar (W), Mumbai -400086**

Sd/-	Sd/	Sd/-	Sd/-
S.E. (V.F.P.)	S.E.S.W	A.E.O.C.(T.M.)	E.E.(H.W.)W.W
		Sd/-	Sd/-
		Dy.H.E.(Maint.)	HE

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SECTION - 1

e-TENDER NOTICE

e-TENDER NOTICE

Sub: Work of operation and comprehensive maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division.

The Brihanmumbai Municipal Corporation (BMC) invites e-tender on Percentage Rate basis to appoint Contractor for the aforementioned work from contractors of repute, multidisciplinary engineering organizations i.e. eminent firm, Proprietary/Partnership Firms/ Private Limited Companies/ Public Limited Companies/Companies registered under the Indian companies' act 2013, the firm registered with Brihanmumbai Municipal Corporation new rules of registration 2015 in Class-A in M&E category or Class-I(B) or above in Civil Engg. category or from the contractors / firms equivalent and superior classes registered in Govt. organization carryingout similar nature of works (excluding those are blacklisted, demoted and debarred in BMC,,PWD, other Govt./semi-Govt. organization in India). The contractors who are not registered with BMC will have to apply for registering their firm within three months time period from the award of contract, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be entirely forfeited / recovered and an amount equal to Registration Fee of respective class will be recovered as penalty.

Bidding Process will comprise of THREE stages.

The application form can be downloaded from BMC's portal (<http://portal.BMC.gov.in>) on payment of (**Rs.10,400/- plus GST @ 18%**). The applicants not registered with BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process & obtain login credentials to participate in the online bidding process.

- i) To download the application form, for those applicants not having vendor registration, need to apply first for vendor registration at the office of Account Officer (FAR), 4th floor, Municipal Headquarter.
- ii) Followed by SRM login ID and password to be obtained from Central Purchase Department (CPD), Office at Byculla, Bakariadda, Mumbai
- iii) For e-Tendering registration, enrollment for digital signature certificates and user manual, please refer to respective links provided in 'Tenders' tab. Vendors can get digital 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 and e- Mudhra.

Bid no. 7200034076				
Name and location of work	Contract period	Estimated Cost in Rs.	EMD in Rs.	Class and Category
Work of operation and comprehensive Maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division.	36 Months	16,57,21,829/-	16,57,300/-	Class-A in M&E category or Class-I(B) in Civil Engg. category

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. 16,57,300/- (Rupees sixteen lakh fifty seven thousand and three hundred 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 Bidders whose Bid Security / EMD shall be retained. The Bidders will have to provide Earnest Money Deposit through the payment gateways while submitting the bids. The Bid shall be summarily rejected if it is not accompanied by the Earnest Money Deposit. The e-tender is available on BMC portal (<http://portal.BMC.gov.in>) as mentioned in the Header Data of the tender.

As per THREE Packet systems, the document for Packet A & B is to be uploaded by the bidder in vendors' document online in Packet A, B. Packet A, B & C shall be opened on dates as mentioned in header data. All the responsive and eligible bidders if they so wish can be present at the time of opening of bids, in the office of Executive Engineer (Head Works) Water Works. The Packet C shall be opened if bids submission in Packet A & B satisfies / includes all the requirements and 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.BMC.gov.in>)

The Tender shall be valid for 180 days from the date of tender opening i.e. Packet 'A' of the tender. The Applicants having any queries regarding subject work may contact the Deputy Hydraulic Engineer (Maintenance) at the following address on any working day during office hours.

Office of : Executive Engineer (Head Work) Water Works
BMC's Water Works Yard, LBS Marg,
Ghatkopar (West), Mumbai- 400 086,

The applicants may wish to visit the site under reference located at Powai, a part of Eastern Suburb of Mumbai and can collect the information of the present status from the department who have invited the bids.

The BMC reserves the rights to accept any of the application or reject any or all the application received for above works, without assigning any reasons thereof. The information regarding above subject matter is available on Website of BMC. (<http://portal.mcgm.gov.in/tenders>)

Sd/-

Dy. H.E. (Maint.)

BRIHANMUMBAI MUNICIPAL CORPORATION
HYDRAULIC ENGINEERS DEPARTMENT

e-Tender Notice

Tender Document No	7200034076
Name of Organization	Brihanmumbai Municipal Corporation
Subject	Work of operation and comprehensive Maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division.
Cost of Tender	(Rs.10,400/- plus GST @ 18%)
Cost of E-Tender(Estimated Cost)	Rs. 16,57,21,829.00
Bid Security Deposit/ EMD	Rs. 16,57,300.00
Date of issue and sale of tender	Dt. 21.07.2022 from 11:00Hrs
Last date & time for sale of tender	Dt. 22.08.2022 up to 12:00Hrs
Submission of Packet 'A' , 'B' & Packet 'C' (Online) & Receipt of Bid Security Deposit	Dt. 22.08.2022 up to 16:00Hrs
Pre bid meeting	Dt. 02.08.2022 At 15.00 Hrs Venue: Hydraulic Engineer office, 1st floor, Engineering Hub, Worli naka, Worli, Mumbai.
Opening of Packet A	Dt. 22.08.2022 after 16:01Hrs
Opening of Packet B	Dt . 22.08.2022 after 16:02Hrs.
Opening of Packet C	Dt. 29.08.2022 after 15:00Hrs.
Address for communication	Office of the:- Dy.HE (Maint.)'s BMC's Water Works Yard, LBS Marg, Ghatkopar (W), Mumbai - 400086
Venue for opening of bid	On line in EE(HW)WW's office.

This tender document is not transferable.

The 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. H.E. (Maint.)

SECTION - 2
ELIGIBILITY CRITERIA

POST- QUALIFICATION CRITERIA (PQC)

Technical Capacity

The tenderer(s) in their own name should have satisfactorily executed the work of similar nature i.e. Experience of having successfully completed work of operation and maintenance of water treatment plant equipped with automation in BMC /Semi Govt. /Govt. & Public Sector Organizations during **last seven (7) years** ending last day of month previous to the one in which bids are invited as a prime(or as a nominated sub-Contractor, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied)

Contractor shall have either of the following :

a) **One** similar completed works or currently executing **one** works of similar nature each costing **60%** of estimated cost **Rs. 9,94,33,098=00**

OR

b) **Two** similar completed works or currently executing **two** works of similar nature each costing **40%** of estimated cost **Rs. 6,62,88,732=00**

OR

c) **Three** similar completed works or currently executing **three** works of similar nature each costing **30%** of estimated cost **Rs. 4,97,16,549=00**

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

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

Financial Capacity

Achieved an average annual financial turnover as certified by 'Chartered Accountant' (dealing in similar nature of work) equal to **Rs. 4,97,16,549=00** of the estimated cost of work in last three (3) financial years immediately preceding the Financial Year in which bids are invited.

- **To ascertain this, tenderer(s) shall furnish /upload the financial statement (Audited balance sheet) duly certified by Chartered Accountant.**
- **The turnover can be enhanced by 10% every year to bring the present level.**

Similar Experience:

For assessing the technical capacity for Operation & Maintenance works; Similar work

shall mean, the completed or ongoing works of Operation and Maintenance of 45MLD or more capacity single drinking water treatment plant having all following facilities:

1. clarifiers, filters, chlorination etc.
2. waste water recycling and sludge removal.
3. PLC - SCADA based full automation or at least it shall be evident in three process units out of filters, clarifiers, recycling and chemical dosing.
4. final water quality results consistently as per BIS10500 norms or better.

Performance certificate shall be submitted for satisfactory performance of the plant including requirements mentioned above in packet B of the e-tender.

The bidder shall have in their name, ISO certification in respect of Operation & Maintenance viz. ISO9001 for Quality Management System and ISO14001 for Environmental Management System.

Proof of the same shall be submitted in packet B of the tender **Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:**

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

Technical Capacity

The tenderer(s) in their own name should have satisfactorily executed work of similar nature i.e. Experience of having successfully completed work of operation and maintenance of water treatment plant equipped with automation in BMC / Semi Govt. / Govt. & Public Sector Organizations during **last seven (7) years** ending last day of month previous to the one in which bids are invited as a prime contractor (or as a nominated sub-Contractor, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied)

- a) **One** completed work or currently executing **one** work of similar nature of aggregate **60%** of estimated cost **Rs. 9,94,33,098=00**

OR

- b) **Two** similar completed works or currently executing **two** works of similar nature each costing **40%** of estimated cost **Rs. 6,62,88,732=00**

OR

- c) **Three** similar completed works or currently executing **three** works of similar nature each costing **30%** of estimated cost **Rs. 4,97,16,549=00**

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

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

Financial Capacity

Achieved an average annual financial turnover as certified by 'Chartered Accountant' (dealing in similar nature of work) equal to **Rs. 4,97,16,549=00** of the estimated cost of work in last three (3) financial years immediately preceding the Financial Year in which bids are invited.

3. Bid Capacity:

The bid capacity of the prospective bidders will be calculated as under: Assessed Available Bid Capacity=(A*N*2 -B)

Where,

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

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

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

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

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

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

SECTION - 3

DISCLAIMER

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, hereafter also referred as “The Authority”, or any of its employees or advisors, is provided to Applicant(s) on the terms and conditions set out in this e-tender and such other terms and conditions subject to which such information is provided.

This e-tender includes statements, which reflect various assumptions and assessments arrived at by the Brihanmumbai Municipal Corporation 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, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this e-tender. The assumptions, assessments, statements and information contained in this e-tender may not be complete, accurate, adequate or correct. Each Applicant should therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this e-tender and obtain independent advice from appropriate sources.

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

The Brihanmumbai Municipal Corporation, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this e-tender or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the e-tender and any assessment, assumption, statement or information contained therein or deemed to form part of this e-tender or arising in any way with pre-qualification of Applicants for participation in the Bidding Process. The Brihanmumbai Municipal Corporation also accepts no

liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Applicant upon the statements contained in this e-tender.

The Brihanmumbai Municipal Corporation 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 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 reserves the right to reject all or any of the Applications or Bids without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by The Brihanmumbai Municipal Corporation 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 shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process.

SECTION - 4

INTRODUCTION

INTRODUCTION

1. Background:

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

The Mumbai Metropolis has historic tradition of strong civic activism dedicated to the cause of a better life for all its citizens. And it's the Brihanmumbai Municipal Corporation, 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 kinds of engineering services viz, Hydraulics, storm water drain, sewerage, water supply projects, roads, bridges, solid waste management, and environmental services. Beside this, the BMC is also providing dedicated services in various segments such as Health, Primary Education as well as the construction and maintenance of Public Markets and Slaughter Houses.

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

Vihar Water Treatment Plant is situated in vicinity of NITIE, Mumbai and spread over about 4 acres area. This Water Treatment Plant caters the need of water supply to Mumbai region. It treats & supply water to the tune of 90MLD.

The 90 MLD state of art technology fully automated water treatment plant at Vihar treatment plant commissioned on 29.12.2019. The plant is equipped with recycling facilities for recirculation of filter backwash water and desludge water from clarifier by removing sludge.

The contract period of existing 90MLD O&M work will be over by 08.08.2022.

It is therefore proposed to carry out this specialized type "**Operation and Maintenance 90MLD Vihar water treatment plant on comprehensive basis inclusive of all allied works by outsourcing it for three(3) years.**"

Scope of work:

BMC primarily an organization which in the interests of citizens and with speed of urbanization deals with the variety of the infrastructure service and delivered to the public by the different department like water supply projects, sewerage projects, hydraulic, storm water drain, roads & bridge and building maintenance, construction etc.

The work of “Operation and comprehensive maintenance of 90MLD water treatment plant” includes scope as follows:

1. Operation of 90MLD water treatment plant:

- i. All operations and process control related to inlet works, Aqua DAF clarifiers, PAC dosing, filters, chlorine dosing etc.**
- ii. Operation of filter backwash water recycling plant for 90MLD.**
- iii. Operation of SRA(Sludge recovery area) plant including sludge handling, transport & disposal.**
- iv. Water quality control by sampling and testing**

SECTION - 5

e-TENDERING ONLINE SUBMISSION PROCESS

E-TENDERING ONLINE SUBMISSION PROCESS

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

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

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

Start Date read as “Sale Date”

End Date read as “Submission Date”

Supplier read as “Contractor/bidder”

Vendor read as “Contractor/bidder”

Vendor Quotation read as “Contractors Bid/Offer”

Purchaser read as “Department/BMC”

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

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

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

- a. Contractors already registered with BMC will approach to Vendor Transfer cell.
- b. Submit his details such as (name, vendor code, address, registered Email ID, pan card etc.) to Vendor transfer cell.
- c. BMC authority for Vendor Transfer, transfers the Vendor to SRM application from R3system to SRM system.
- d. Transferred Vendor receives User ID creation link on his supplied e-mail Id.
- e. Vendor creates his User ID and Password for e-tendering applications by accessing link sent to his mail ID.

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

- a. Vendor fills up Self Registration form via accessing BMC portal.

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

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

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

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>) under e-tender section.

SECTION – 6

INSTRUCTIONS TO APPLICANTS

INSTRUCTIONS TO APPLICANTS

Scope of Application

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

Eligibility of Applicants

The Brihanmumbai Municipal Corporation (BMC) invites e-tender on Percentage Rate basis to appoint Contractor for the aforementioned work from contractors of repute, multidisciplinary engineering organizations i.e. eminent firm, Proprietary/Partnership Firms/ Private Limited Companies/ Public Limited Companies/Companies registered under the Indian companies' act 2013, the firm registered with Brihanmumbai Municipal Corporation new rules of registration 2015 in Class-A in M&E category or Class-I(B) in Civil Engg. category or from the contractors / firms equivalent and superior classes registered in Govt. organization carrying out similar nature of works (excluding those are blacklisted, demoted and debarred in BMC,,PWD, other Govt./semi-Govt. organization in India). The contractors who are not registered with BMC will have to apply for registering their firm within three months time period from the award of contract, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be entirely forfeited / recovered and an amount equal to Registration Fee of respective class will be recovered as penalty.

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

1. For New and Original works:

Name of the Deptt.	Details of project works
H.E	work of operation and comprehensive maintenance of water treatment plant.

Technical Capacity (Post Qualification Criteria)

The tenderer(s) in their own name should have satisfactorily executed work of similar nature i.e. Experience of having successfully completed work of operation and maintenance of water treatment plant equipped with automation in BMC / Semi Govt. / Govt. & Public Sector Organizations during **last seven (7)years** ending last day of month previous to the one in which bids are invited as a prime contractor (or as a nominated sub-Contractor, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied)

d) **One** similar completed works or currently executing **one** works of similar nature each costing **60%** of estimated cost **Rs. 9,94,33,098=00**

OR

e) **Two** similar completed works or currently executing **two** works of similar nature each costing **40%** of estimated cost **Rs. 6,62,88,732=00**

OR

f) **Three** similar completed works or currently executing **three** works of similar nature each costing **30%** of estimated cost **Rs. 4,97,16,549=00**

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.

Financial Capacity

Achieved an average annual financial turnover as certified by 'Chartered Accountant' (in all classes of civil engineering construction works only) equal to **Rs. 4,97,16,549=00** of the estimated cost of work in **last three (3) financial years** immediately preceding the Financial Year in which bids are invited the actual value of work at compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of applications for tenders.

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

A. Contract Execution

All required documents for execution of the contract shall be submitted **within 30 days** from the date of issue of letter of acceptance. If the documents are not submitted within the stipulated time a penalty of Rs 5000/- per day will be applicable to the contractor. All contract documents need to be duly affixed with stamp duty properly signed along with evidence/proof of payment of security/contract deposit/ within **30 days** from the date of letter of acceptance received by him.

B. Time Period of the project

Entire project should be completed and delivered within 36 months of time from the date of award of contract that includes/~~excludes~~ Monsoon.

The time allowed for carrying out the work as entered in the Tender shall be strictly observed by the Contractor and shall be reckoned from the date on which the Letter of Acceptance is given to the Contractor. The work shall throughout the stipulated period of the Contract be proceeded with

all due diligence as time being deemed to be the essence of the contract on the part of the Contractor. On failing to do so, the Contractor shall pay as compensation an amount which shall be governed as per Standard General Conditions of Contract.

The Contractor should complete the work as per phase given below :

¼ of the work in	..	¼ of the time
½ of the work in	..	½ of the time
¾ of the work in	..	¾ of the time
Full of the work in	..	Full of the time

Full work will be completed in 36 months including monsoon.

The above programme is indicative and need to be worked out for every project for major activities) with respect to parameters such as labour, machineries, settling time, procurement and transportation of materials etc. The Dy.Chief Engineer shall approve the phase programme of the project in the Tender Document.

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

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

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

E. Action when whole of security deposit is forfeited:

In any case in which under any Clause of this contract, the contractor shall have rendered himself liable to pay compensation amounting to the whole of this security deposit whether paid in one sum or deducted by installments or in the case of abandonment of the work owing to serious illness or death of the contractor or any other cause, the Engineer on behalf of the Municipal Commissioner shall have power to adopt any of the following process, as he may deem best suited to the interest of BMC.

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

of the contract shall stand forfeited and be absolutely at the disposal of BMC.

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

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

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

view to the execution of the work or the performance of the contract.

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

If the contractor assigns or sublets his contracts or attempt so to do, or become insolvent or commence any proceeding to get himself adjudicated and insolvent or make any composition with his creditors, or attempt so to do or if bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given promised or offered by the contractor or any of his servants or agents through any public officer, or person in the employ of BMC/Govt. in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract the Engineer In-charge may thereupon, by notice in writing rescind the contract and the Security Deposit of the Contractor shall thereupon stand forfeited and be absolutely at the disposal of BMC and the same consequences shall ensure as if the contract had been rescinded under above clause J hereof; and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

Submission of Tenders

PACKET – A

The Packet 'A' shall contain scanned certified copies of the following documents. Scrutiny of this packet will be done strictly with reference to only the scanned copies of Documents uploaded online in packet 'A'

- a. Valid Registration Certificate.
- b. Valid Bank Solvency Certificate of Minimum Solvency amount as governed by Registration Rules in force for respective Class of Contractor for Civil and M&E works not later than 6 months from the starting date of bid.
- c. A document in support of Registration under GST 2017. Those not registered in Maharashtra shall submit an undertaking to the effect that if they are successful tenderer, they shall submit GST Registration Certificate in Maharashtra within 15 days of issue of work order, failing which payment for the work executed will not be released.
- d. Certified copies 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 Undertakings, no 'PAN' documents will be insisted.
- e. Latest Partnership Deed in case of Partnership firm duly registered with Chief Accountant (Treasury) of BMC.
- f. The bidders shall fill and with stamp/Seal of organization and upload the tender form.
- g. The technical specification, terms and conditions pages, BMC format undertaking filled &

signed/seal shall be uploaded as the bidder uploaded with digital signatures, these implies they have accepted all the terms and conditions and gone through technical specification of subject tender.

The bidders shall categorically provide their Vendor code & Email-ID in packet 'A'.

NOTE:

- **If the tenderer(s) withdraw tender offer during the tender validity period, his entire E.M.D shall be forfeited.**
- **If it is found that the tenderer has not submitted required curable documents in Packet "A" then, the shortfalls will be communicated to the tenderer through e-mail only and compliance required to be made within a time period of three working days otherwise they will be treated as non-responsive.**

PACKET – B

The Packet ‘B’ shall contain scanned certified copies of the following documents-

The Packet ‘B’ shall contain scanned certified copies of the following documents –

- a) The list of similar type of works as stated in para ‘A’ of Post qualification successfully completed during the last Seven (7) years in prescribed proforma, in the role of prime contractor. Information furnished in the prescribed proforma(Proforma – I) shall be supported by the certificate duly self-attested. Documents stating that it has successfully completed during the last Seven (7) years at least one contract of similar works as stated in para 2.1 OR 6.2.c of Post qualification.
- b) Annual financial turnover for preceding three (3) financial years as certified by Chartered Accountant preceding the Financial Year in which bids are invited. Copies of Applicants duly audited balance sheet and profit and loss account for the preceding three (3) financial years preceding the Financial Year in which bids are invited. (Proforma–II).
- c) Documents stating that, it has access to or has available liquid assets, unencumbered assets, lines of credit and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements for the subject contract in the event of stoppage, start-up, or other delay in payment, of the minimum 15% of the cost of the work tendered for, net of the tenderer's commitment of other contracts (Certificate from Bankers / C.A./Financial Institution shall be accepted as a 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, at site before start of the work. (For Regular, Routine and Maintenance works)

~~— i. **Regular and Routine works:** The successful bidder shall make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge. The successful bidder and, to that effect he will ensure commitment on an undertaking on Rs.500 stamp paper to be submitted along with the Bid in Packet B. However, this condition in no way shall dilute the respective condition in Registration Rules of MCGM.~~

ii. New and Original Works: The bidder should, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with assessment study of requirements of equipment/plants & machineries to allow the employer to review their proposal. The bidder shall ensure his commitment to make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge on an undertaking on Rs.500 stamp paper to be submitted along with the Bid in Packet B. However, this condition in no way shall dilute the respective condition in Registration Rules of BMC.

~~**iii. Special Works:** The concerned Ch.Eng. shall enlist the equipments in the tender document justified for the project and ensure the capacity of the bidder for the same with the approval of concerned AMC.~~

Note:

- 1. Insistence of availability of equipment’s/plants at a particular distance from site**

should not be made in the tender document.

- e) The list of the 'Technical Personnel's' with their qualification, working in the tenderer establishment as per Pro-forma IV.
- f) Details of works in hand and for which bid is already submitted(Proforma VI-A & VI-B) (original), along with copies of work orders & attested copies of percentage of works completed or part thereof.
- g) Statement showing assessed available Bid Capacity.
- h) The undertaking of Rs.500/- stamp paper as per the proforma annexed in Annexure B (Pre-Contract Integrity pact), C (Indemnity bond), F (Irrevocable undertaking) and undertaking to be submitted by tenderer.

Note: Bidders shall submit the undertaking for equipment capability and other undertakings as such on a single Rs.500/- stamp paper.

- i) Undertaking on Rs. 500 stamp paper stating that tenderer is conversant to all site situation and difficulty & has inspected the site personally and accordingly bid is submitted.
- j) Tenderer shall submit the undertaking that he will submit license certificate from the office of labour commissioner as after issue of work order & before commencing the work, if the work is allotted to him.
- k) Pre bid meeting minutes, signed copy of Addendum, if any.
- l) The tenderers shall upload work plan as per the following outline:
 - 1. GANTT chart/ PERT/ CPM chart showing the completion of work within prescribed time period, considering major activities.
 - 2. Organizational set up envisaged by the contractors.
 - 3. Plant & equipment proposed to be deployed for this work.
 - 4. Site Offices and Laboratories proposed to be set up.
 - 5. A note on how the whole work will be carried out (work plan including methodology).
 - 6. Quality management plan.
 - 7. All the activities included in the Scope of Work shall be covered in the work plan.
- m) Information on litigation history in which tender is involved for last five years from the date of submission of bid as per directions given in circular no.MGC/F/6565 dated 25.09.2018

Note:

- i. The Electrical / Mechanical work shall be got carried out by the civil contractors through the contractors registered with BMC. in Electrical Category. Information about the registered contractors shall be obtained from the office of the Ch.E. (M&E)/ E.E. (Monitoring & Registration Cell). Attested scanned copy of the valid registration certificate in Electrical Category shall be uploaded with the tender along with the undertaking from the registered Electrical Contractor stating his willingness to carry out the tender work.
- ii. The successful bidder shall submit valid registration certificate under E.S.I.C., Act 1948, if

the tenderer has more than 10 employees /persons on his establishment (in case of production by use of energy) and 20 employees/persons on his establishment (in case of production without use of energy) to BMC as and when demanded. In case of less employees/persons mentioned above then the successful bidder has to submit an undertaking to that effect on Rs. 200 stamp paper as per circular u/no. CA/FRD/I/65 of 30.03.2013.

iii. The successful bidder shall submit valid registration certificate under E.P.F. & M.P., Act 1952, if tenderer has more than 20 employees/persons on his establishment, to BMC as and when demanded. In case if the successful bidder has less employees/persons mentioned above then the successful bidder has to submit an undertaking to that effect on Rs. 200 stamp paper as per circular u/no. CA/FRD/I/44 of 04.01.2013.

Note : If it is found that the tenderer has not submitted required curable documents in Packet “B” then, the shortfalls will be communicated to the tenderer through e-mail only and compliance required to be made within a time period of three working days otherwise they will be treated as non-responsive.

PACKET – C

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

Note:

- **In case of rebate/premium of 15% and above as quoted by the tenderer, the rate analysis of major items along with reasonable explanation for quoted low/high rates, it shall be submitted by L1 and L2 bidder after demand notification by e-mail to bidders by concerned Dy.Ch.Eng. The format for rate analysis is annexed.**
- **Rate analysis in prescribed format shall be submitted online to the engineer in-charge within 3 working days from date of communication on email, failing which EMD will be forfeited and the bid will be rejected & next successful/responsive bidder will be considered thereafter, negotiation will be done with the said successive / responsive bidder with respect to his quoted rate.**

BID SECURITY OR EMD

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.
2. The tenderers shall pay the EMD online instead paying the EMD at any of the CFC centers in BMC Ward Offices.
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.
4. a). The Bid Security of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposits.

b). The Bid Security / EMD and ASD of L-2 and other higher bidders (L-3, L-4, etc.) shall be refunded immediately after opening of financial bid.

c). 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 departments within the stipulated time period i.e. 15 days, the department will process further as per normal procedure.
5. 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.
6. The cases wherein if the shortfalls are not complied by a contractor, will be informed to Registration and Monitoring Cell. Such non-submission of documents will be considered as 'Intentional Avoidance' and if three or more cases in 12 months are re-reported, shall be viewed seriously and disciplinary action against the defaulters such as banning/de-registration, etc. shall be taken by the registration cell with due approval of the concerned AMC.
7. In case of curable/ non curable defects due to non-fulfillment of requirement of BMC as prescribed & in the event, the bidder becomes non responsive & the 10% EMD will be forfeited and bid will be rejected. 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.

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

Note:

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

a. Non-submission of following documents,

- i. Valid Registration Certificate.
- ii. Valid Bank Solvency.
- iii. Goods and Services Tax (GST) Registration Certificate
- iv. Certified Copies of PAN documents and photographs of individuals owners, etc
- v. Partnership Deed and any other documents.
- vi. Undertakings as mentioned in the tender document.
- vii. Wrong calculation of Bid Capacity
- viii. In Packet 'A' as well as Packet 'B', 02 nos. of shortfalls in curable defects will be allowed & 2% EMD will be forfeited for each shortfalls thereafter.

II) Non-curable Defect shall mean

- a. In-adequate submission of EMD/ASD amount,
- b. In-adequacy of technical and financial capacity with respect to Eligibility criteria as stipulated in the tender.
- c. No proper submission of experience certificates and other documents, etc.

BID VALIDITY

Bids shall remain valid for a period of not less than one eighty (180) days after the deadline date for bid submission specified in Header/ Bid Data Sheet. A bid valid for a shorter period shall be rejected by the BMC 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 e-mail. 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.

DEFECT LIABILITY PERIOD (Not Applicable)

The Contractor is expected to carry out the construction work in Workmen like manner so as to meet the requirement and specification for the project. It is expected that the Workmanship and materials will be reasonably fit for the purpose for which they are required.

Defects or defective work is where standard and quality of workmanship and materials as specified in the contract is deficient. Defect is defined as a failure of the completed project to satisfy the express or implied quality or quantity obligations of the construction contract. Defective construction works are as the works which fail short of complying with the express descriptions or requirements of the contract, especially any drawings or specifications with any implied terms and conditions as to its quality, workmanship, durability, aesthetic, performance or design. Defects in construction projects are attributable to various reasons.

Some of the defects are structural defects results in cracks or collapse of faulty defective plumbing, inadequate or faulty drainage system, inadequate or faulty ventilation, cooling or heating systems, inadequate fire systems etc. The defects could be various on accounts of different reasons for variety of the projects.

The Engineering In charge/Project Officer shall issue the practical completion certificate for the project. During the Defect Liability Period which commences on completion of the work, the Engineering In charge shall inform or the contractor is expected to be informed of any defective works by the Employer's representative of the defects and make good at contractor's cost with an intention of giving opportunity to the contractor of making good the defects appeared during that period. It is the contractor's obligation under the contract to rectify the defects that appear during Defect Liability Period and the contractor shall within a reasonable time after receipt of such instructions comply with the same at his own cost. The Engineering In

charge/Project Officer shall issue a certificate to that effect and completion of making good defects shall be deemed for all the purpose of this contract to have taken place on the day named in such defect liability certificate.

If defective work or workmanship or design have been knowingly covered-up or conceived so as to constitute fraud, commencement of the Defect Liability Period may be delayed. The decided period may be delayed until discover actually occurs on at least the defect could have been discovered with reasonable diligence, whichever is earlier.

The Defect Liability Period (DLP) shall be as below :

Dept	Type of works	DLP
Roads / Bridge	For cement concrete road/ Mastic works	5 years
	Asphalt work	3 years
	Paver Block	3 years
	Structural work	5 years
	General works	5 years
BM/SIC/HIC	General works	3 years
	Structural works	5 years
	Waterproofing works	5 years
Ward Works	All ward level works	2 years
Other Works	Pot holes and pre-monsoon bad patch repair work	1 years
For other departments	HE, WSP, SP, SWD, Garden	3 Years

Also, in case of defect, the Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at. The Defects Liability Period shall be extended for as long as Defects remain to be corrected. Every time notice of Defect/Defects is given, the Contractor shall correct the notified Defect/Defects within the duration of time specified by the Engineer's notice. The Engineer may issue notice to the Contractor to carry out removal of defects or deficiencies, if any, noticed in his inspection, or brought to his notice.

The Contractor shall remove the defects and deficiencies within the period specified in the notice and submit to the Engineer a compliance report. It is the Completion Stage when the contractor has completed all of the works and fixed all of the defects that were on the list of issue by Engineer-in-charge. When this happens, the engineer must issue a 'Certificate of Completion'. On the issue of 'Certificate of Completion', the 'Defect Liability Period' starts. The contractor also must issue a 'Certificate statement' as an acknowledgment to the engineer not later than 14 days after the 'Certificate of Completion' has been issued. During the 'Defect Liability Period', the contractor has to obey all written instructions from the engineer to

carryout repairs and fix any defects which appear in the Permanent Works. If the contractor does not ,due to his own faults finish the repair works or fix the defects by the end of ‘Defect Liability Period’, the ‘Defect Liability Period’ will continue until all works instructed by engineer is done.

SECURITY DEPOSIT AND PERFORMANCE GUARANTEE

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 contractor shall pay an amount equal to **two (2)** percent of the contract sum shall be paid within thirty days from the date of issue of letter of acceptance. The said contract deposit shall be paid in the form of Demand Draft (D.D) only.

II) **Retention Money**(as per circular no. AMC/P/8108 Dated 23.02.2022)(Not applicable)The contractor shall pay the retention money an amount equal to **fifteen (15)** percent of the Contract Sum which will be recovered from the contractors every bill i.e. interim / running / final bill. The clause of retention money will not be applicable M. & E. Department.

B. Additional Security Deposit

(As per circular No. AMC/P/8108 Dated 23.02.2022)

1. A.S.D. shall be applicable as under:

Rebate quoted by the contractor	ASD Applicable
Up to 12% Rebate	No ASD
Rebate above 12.00 % on estimated cost	At 2.00% of Estimated cost for each % rebate & part thereof, in D.D. only

2. The bidders shall submit the ASD as applicable in the form of Demand Draft, which is to be submitted during office hours minimum one day before opening of packet 'C' to respective Head Clerk (Expenditure) of the Engineer in-charge of the HE Division in sealed envelope. If A.S.D. is not applicable then the bidders shall submit sealed envelope mentioning on their letter head 'ASD is not applicable'.

If the bidders fail to submit the sealed envelope as mentioned above at least one day before opening of Packet 'C' within office hours then the EMD of the respective bidders will be forfeited and the company with their Directors/ Partners and other companies with the said directors / Partner will be further debarred from any tendering process for the period of at least 2 years.

C: Performance Guarantee

The successful tender, here after referred to as Contractor shall pay in the form of ‘Performance

Guarantee” at different rates for different slabs as stated below:

Offer	PG Applicable %
For premium at par and rebate 0 to 12 %	PG = 0.92 % X contract sum applicable for rebate of 12 %
For rebate of 12.01 %	P.G. = { 0.92 % X Contract sum applicable for rebate of 12 % } + (X) X contract sum where, X = percentage rebate quoted more than 12 %

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

The PG shall be paid in one of the following forms:

- I) Cash (In case Guarantee amount is less than Rs. 10,000/-)
- II) Demand draft (In case Guarantee amount is less than Rs. 1,00,000/-)
- III) Government Securities
- IV) Fixed deposit receipts (FDR) of schedule Bank
- V) An electronically issued irrevocable bank guarantee bond of any schedule bank or in the prescribed form given in Annexure.

Performance Guarantee is applicable over and above the clause of Security Deposit. Performance Guarantee will have to be paid & shall be valid till the defect liability period or finalization of final bill whichever is later.

This deposit will be allowed in the form of I to V as mentioned above and shall be paid within 30 days after receipt of Letter of Acceptance.

Note : Following Expectations shall be adopted for ‘Demolition tender’

- i. Irrespective of offer (Rebate / at par / premium), ASD shall be differed and only PG of 10 % of contract sum be taken from the successful bidder on award of contract only.
- ii. BMC department shall ensure to incorporate specific condition regarding above in bid document and e- tender notice.

D. Refund of Security Deposit

I. Refund of Contract Deposit : The Contract Deposit shall be released within 30 days after completion of 3rd year of DLP and after issue of ‘Defect Liability Certificate’ (3 years DLP) subject to no recoveries are pending against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Contractor. No claim shall be made against the

Balance Contract Deposit after the issue of Defects Liability Certificate.

II. Refund of Retention Money : The Retention Money will be refunded after completion of defect liability period and after issue of "Defect Liability Certificate" (in case of 1 or 3 or 5 years DLP) Engineer is satisfied that there is no demand outstanding against the Contractor. In the event of different Defects Liability Periods have been specified or become applicable to different sections or parts of the Permanent Works, the said money will be released within 30 days on expiration of such Defects Liability Periods. In the event the Engineer issues a Taking-over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Contractor.

III. Refund of Additional Security Deposit : One-half (50%) of the additional security deposited (ASD) shall be released after the completion of 50% financial progress of the work.

The balance ASD shall be released within 30 days of issue of 'Certificate of Completion' with respect to the whole of the work. 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 Refund of ASD to the contractor.

IV. Refund of Performance Guarantee :

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

❖ Summary of time of Refund of deposit is tabulated as follows:

a. Time of refund for works having 5 years DLP

Deposits refunded after 50% Financial Completion	Deposits refunded after completion	After 3 yrs of DLP	After Completion of DLP
50% ASD	Balance 50% ASD	CD	RM

b. Time of refund for works having 5 years DLP

Deposits refunded after 50% Financial Completion	Deposits refunded after completion	After Completion of DLP
50% ASD	Balance 50% ASD	RM + CD

Note :

- a) It shall be clearly mentioned that the BG shall be applicable for individual work/contract and clubbing of various contracts of the said contractor will not be allowed. In case of obtaining Bank Guarantee, it is necessary to mention that the same shall be valid further 6 months from the completion of defect liability period/ warranty period.
- b) It shall be the responsibility of the bidder to keep the submitted B.G. “VALID” for the stipulated time period in the tender & in case of its expiry it will attract penalization.
- b) Bank Guarantee should be issued by way of General Undertaking and Guarantee issued on behalf of the Contractor by any of the Nationalized or Scheduled banks or branches of foreign banks operating under Reserve Bank of India regulations located in Mumbai upto Virar & Kalyan. List of approved Banks is appended at the end of Instructions to Bidders (ITB). **The Bank Guarantee issued by branches of approved Banks beyond Kalyan and Virar can be accepted only if the said Bank Guarantee is countersigned by the Manager of a Regional Branch of the same bank within the Mumbai City Limit categorically endorsing thereon that the said Bank Guarantee is binding on the endorsing Branch of the Bank or the Bank itself within Mumbai Limits and is liable to be enforced against the said Branch of the Bank or the bank itself in case of default by the Contractors furnishing the Bank Guarantee.** The Bank Guarantee shall be renewed as and when required and/or directed from time to time until the Contractor has executed and completed the works and remedied any defects therein.

E. Legal + Stationary Charges: (As per applicable circular)

Successful tender shall pay the Legal Charges +Stationary charges as per legal department Circular no. 10318 dtd.24.03.2022

Contract Value						Legal+ Stationery Charges
from	Rs.	10,001/-	To	Rs.	50,000/-	Nil
from	Rs.	50,001/-	To	Rs.	1,00,000/-	Rs.6,290/-
from	Rs.	1,00,001/-	To	Rs.	3,00,000/-	Rs.10,380/-
from	Rs.	3,00,001/-	To	Rs.	5,00,000/-	Rs. 12,470/-

from	Rs.	5,00,001/-	To	Rs.	10,00,000/-	Rs. 14,510/-
from	Rs.	10,00,001/-	To	Rs.	20,00,000/-	Rs. 16,570/-
from	Rs.	20,00,001/-	To	Rs.	40,00,000/-	Rs. 18,660/-
from	Rs.	40,00,001/-	To	Rs.	1,00,00,000/-	Rs. 20,720/-
from	Rs.	1,00,00,001/-	To	Rs.	10,00,00,000/-	Rs. 24,450/-
from	Rs.	10,00,00,01/-	To	Rs.	20,00,00,000/-	Rs. 28,220/-
from	Rs.	20,00,00,001/-	To	Rs.	30,00,00,000/-	Rs. 31,980/-
from	Rs.	30,00,00,001/-	To	Rs.	40,00,00,000/-	Rs. 35,740/-
from	Rs.	40,00,00,001/-	To	Rs.	50,00,00,000/-	Rs. 39,470/-
from	Rs.	50,00,00,001/-	To	Rs.	1,00,00,00,000/-	Rs. 47,000/-
from	Rs.	1,00,00,00,001/-	To	Rs.	2,00,00,00,000/-	Rs. 58,270/-
from	Rs.	2,00,00,00,001/-	To	Rs.	3,00,00,00,000/-	Rs. 65,770/-
from	Rs.	3,00,00,00,001/-	To	Rs.	4,00,00,00,000/-	Rs. 75,120/-
from	Rs.	4,00,00,00,001/-	To	Rs.	5,00,00,00,000/-	Rs. 84,510/-
from	Rs.	5,00,00,00,001/-	To	Rs.	Any amount	Rs. 93,920/-

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

F. Stamp Duty: (As per applicable circular at the time of award of contract)

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 Bombay Stamp Act 1958, stamp duty is payable for “works contract” that is to say, a contract for works and labour or services involving transfer of property in goods (whether as goods or in some other form) in its execution and includes a sub-contract, as under :

Article 63 of Schedule I of Maharashtra Stamp Act

a	Where the amount or value set forth in such contract does not exceed Rupees Ten Lakh.	Five Hundred rupees stamp duty
---	---	--------------------------------

b	Where it exceeds rupees ten lakhs	Five hundred rupees plus 0.1% of the amount above Rupees ten lakh subject to the maximum of Rupees Twenty Five lakh.
c	Bank guarantee: As per article 54 read with 40(b) of stamp duty act, stamp duty of 0.5% will be applicable to all bank guarantee submitted also which are required to be renewed after expiry of time period	0.5% of the BG amount

- ii. The successful bidder shall enter into a contract agreement with M.C.G.M. within 30 days from the date of issue of Work Order and the same should be adjudicated for payment of Stamp Duty by the successful bidder.
- iii. Further shortfall if any, in amount of stamp duty paid as against prescribed amount for the documents executed in Mumbai City & Mumbai Suburban District be recovered from the concerned work contractors and to deposit the deficit or unpaid Stamp Duty and penalty by two separate Demand Draft or Pay Order in favour 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. The cost worked out after adding the physical contingencies shall be considered for computing the stamp duty charges to be paid for the contract agreement.

IMPORTANT DIRECTIONS

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

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

2. Applicants/Bidders shall refer [portal.mcgm.gov.in\tenders](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 ae01dyhemaint.he@mcgm.gov.in The subject shall clearly bear the following identification/ title: **"Queries/ Request for Additional Information: TENDER for Work of operation and comprehensive Maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division. Any changes in mail ID will be intimated on the portal.**

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

In case of equal percentage of lowest bidders is obtained even after re-quoting, then the successful bidder will be decided by lottery system by concerned Ch.Engg.

The bidder shall need to submit the additional ASD if applicable within 15 days after receipt of notification issued by concerned Chief Engineer.

Also, the Performance Guarantee shall be paid in 15 days after receipt of Letter of Acceptance.

SECTION - 7
SCOPE OF WORK

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.

Preamble:

The Brihanmumbai municipal corporation (BMC) owns state of art technology fully automated 90 MLD water treatment plant situated at powai. In addition to water treatment plant is equipped with recycling facilities for recirculation of filter back wash water and desludge water from aquaDAF clarifier by removing sludge. The plant is built by M/s. Suez India Pvt. Ltd and commissioned on 29.12.2019 followed by Operation & Maintenance (O&M) of plant during guarantee period of one year and three years O&M period. The O&M period will be over by 08.08.2022.

Therefore Operation & Maintenance of fully automated 90MLD Water Treatment Plant at Powai consisting of inlet works, aquaDAFclarifiers, rapid sand filters, dosing systems for PAC, chlorine & polyelectrolyte, sludge recovery plant for desludge water of aquaDAF clarifiers of 90 MLD, sludge handling and transportation, filter back wash water recirculation for 90 MLD WTP, water sampling, testing and quality control, online flow measuring devices and quality monitoring instruments, providing consumables and machinery spares on comprehensive basis including all allied works is proposed to be outsourced for three years period or till the BMC staff will be appointed and conversant to the works assigned to them.

The work of 'Operation & Maintenance of new 90 MLD Vihar Water Treatment Plant, Powai' involves scope as follows -

1. Operation of 90MLD Water Treatment Plant -

- i) All operations and process control related to inlet works, Aqua Daf clarifiers, PAC dosing, filters, chlorine dosing.
- ii) Operation of filter backwash water recycling plant for 90MLD plant.
- iii) Operation of SRA(sludge recovery area) plant including sludge handling, transport & disposal.
- iv) Water quality control by sampling and testing

2. Maintenance of 90 MLD water treatment plant.

- i) Maintenance of all mechanical, electrical, and civil equipments of 90 MLD WTP, filter back wash recycling plant for 90MLD plant and SRA plant. (List of equipments as per Annexure V)
- ii) Maintaining complete automation system involving instrumentation, SCADA, various sensors, ICP etc.

3. Associated works of 90 MLD WTP:

- i) Start-ups and shut-downs
- ii) Emergency handling
- iii) Security
- iv) Housekeeping
- v) Transportation
- vi) Gardening
- vii) Maintaining internal roads
- viii) Street lighting
- ix) Compliance to statutory / legal requirements
- x) Health, safety and environment measures

Note: The detail specifications of complete work is specified in section 10 i.e. Specifications & Selection of Material.

SECTION - 8

BILL OF QUANTITIES

BRIHANMUMBAI MUNICIPAL CORPORATION
HYDRAULIC ENGINEER'S DEPARTMENT

Sub:	Work of operation and comprehensive maintenance 90MLD Vihar water treatment plant under AEOC(T.M.) division.				
Estimate					
Sr. no.	Description	Qty.	unit	rate in Rs. (Exclusive of all taxes & duties)	Amount in Rs. (Exclusive of all taxes & duties)
1	Operation & Maintenance of fully automated 90 MLD Water Treatment Plant at powai consisting of inlet works, aquaDAF clarifiers, rapid sand filters, dosing systems for PAC, chlorine & polyelectrolyte, sludge handling and transportation, filter back wash water recirculation plant for 90 MLD WTP, water sampling, testing and quality control, online flow measuring devices and quality monitoring instruments, providing consumables and machinery spares on comprehensive basis including all allied works complete as per the tender specifications requirements -				
	For 1st year	12	month	3570193.00	42842316
	For 2nd year	12	month	3927212.33	47126548
	For 3rd year	12	month	4319933.58	51839203
2.	Critical spare parts for 3 yrs of O&M	1	Job		6157851
3.	Total				147965918
4.	GST(6%SGST +6% CGST)				17755911
5.	Grand Total				165721829
In Words. Rupees Sixteen crore fifty seven lacs twenty one thousand eight hundred and twenty nine only.					
Tenderer's Full Address and TelephoneNo.			Tenderer's Signature and Stamp		
Note : This page does not need any uploading. The values are to be filled in online in Packet "C". Due to character limitations in packet "C" full description of job cannot be incorporated. The full description can be referred to this page.					

SECTION – 9

GENERAL CONDITIONS OF CONTRACT

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General Conditions of Contract

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

The “Contract” shall mean the tender and acceptance thereof 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.

The Contract Data defines the documents and other information which comprise the Contract.

The “Contractor” shall mean the individual or firm or company whether incorporated or not, whose tender has been accepted by the employer and the legal successor of the individual or firm or company, but not (except with the consent of the Employer) any assignee of such person.

The Bidder is a person or corporate body who has desired to submit Bid to carry out the Works, including routine maintenance till the tender process is concluded.

The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.

The “Contract Sum” means the sum named in the letter of acceptance including Physical contingencies subject to such addition thereto or deduction there-from as may be made under the provisions hereinafter contained.

Note : The contract sum shall include the following –

- In the case of percentage rate contracts the estimated value of works as mentioned in the tender adjusted by the Contractor’s percentage.
- In the case of item rate contracts, the cost of the work arrived at after finalisation of the quantities shown in schedule of items / quantities by the item rates quoted by the tenderers for various items and summation of the extended cost of each item.

- In case of lumpsum contract, the sum for which tender is accepted.
- Special discount / rebate / trade discount offered by the tenderer if any and accepted by the Corporation.
- Additions or deletions that are accepted after opening of the tenders.

The “Contract Cost” means the Contract Sum plus Price Variation. This cost shall be included in the letter of acceptance.

A Defect is any part of the Works not completed in accordance with the Contract.

The Defects Liability Certificate is the certificate issued by the Engineer, after the Defect Liability Period has ended and upon correction of Defects by the Contractor.

Drawings means all the drawings, calculations and technical information of a like nature provided by the Engineer to the Contractor under the Contract and all drawings, calculations, samples, patterns, models, operation & maintenance manual and other technical information of like nature submitted by the Contractor and approved by the Engineer.

The Authority shall mean Brihanmumbai municipal corporation(BMC)

The “Employer” 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)” and the Deputy Municipal Commissioner, to whom the powers of Municipal Commissioner, have been deputed under Section 56 and 56B of the Mumbai Municipal Corporation Act.

The Engineer in-charge shall mean the Executive Engineer in executive charge of the works and shall include the superior officers of the Engineering department i.e. Dy.Ch.Eng/Ch.Eng. and shall mean and include all the successors in BMC.

The Engineer's Representative shall mean the Assistant Engineer, Sub. Engineer/Jr. Engineer in direct charge of the works and shall include Sub Eng./ Jr. Eng of Civil section/ Mechanical section/ Electrical section appointed by BMC.

The “Engineer” shall mean the City Engineer / the Hydraulic Engineer / 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 City Engineer / the Hydraulic Engineer / the Chief Engineer / the Special Engineer or any other competent person appointed by the employer and notified in writing to the Contractor to act in replacement of the Engineer from time to time.

Contractor's Equipment means all appliances and things of whatsoever nature required for the execution and completions of the Works and the remedying of any defects therein, but does not include plant material or other things intended to form or forming part of the Permanent Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the construction works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works and works of routine maintenance.

Plant is any integral part of the Works that shall have a mechanical, electrical, electronic, chemical, or biological function.

Routine Maintenance is the maintenance of activities of the completed structure for five years as specified in the Contract Data.

The "Site" shall mean the land and other places including water bodies more specifically mentioned in the special conditions of the tender, on, under in or through which the permanent works or temporary works are to be executed and any other lands and places provided by the Municipal Corporation for working space or any other purpose as may be specifically designated in the contract as forming part of the site.

Site Investigation Reports are those that were included in the bidding documents and are reports about the surface and subsurface conditions at the Site.

"Specification" shall mean the specification referred to in the tender and any modification thereof or addition or deduction thereto as may from time to time be furnished or approved in writing by the Engineer.

The Start Date/Commencement Date is given in the Contract Data. It is the date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

A Nominated Sub-Contractor is a person or corporate body who has a Contract with the Contractor to carry out a part of the construction work and/or routine maintenance in the Contract, which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

Variation means a change to the:-

- i) Specification and /or Drawings (if any) which is instructed by the Employer.
- ii) Scope in the Contract which is instructed by the Employer.
- iii) Price in the Contract which is instructed by the Employer.

The Works, as defined in the Contract Data, are what the Contract requires the Contractor to construct, install, maintain, and turn over to the Employer. Routine maintenance is defined separately.

Jurisdiction: In case of any claim, dispute or difference arising in respect of a contract, the cause of action thereof shall be deemed to have arisen in Mumbai and all legal proceedings in respect of any claim, dispute or difference shall be instituted in a competent court in the City of Mumbai only.

2. Interpretation

In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about these Conditions of Contract.

If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

The documents forming the Contract shall be interpreted in the following documents: (1) Agreement, (2) Letter of Acceptance, (3) Notice to Proceed with the Work , (4) Contractor's Bid, (5) Contract Data, (6) Special Conditions of Contract Part (7) General Conditions of Contract Part I, (8) Specifications, (9) Drawings, (10) Bill of Quantities, and (11) Any other document listed in the Contract Data.

3. Engineer's Decisions

Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer. However, if the Engineer is required under the rules and regulations and orders of the Employer to obtain prior approval of some other authorities for specific actions, he will so obtain the approval,

before communicating his decision to the Contractor.

Except as expressly stated in the Contract, the Engineer shall not have any authority to relieve the Contractor of any of his obligations under the contract.

4. Delegation

4.1 The Engineer, with the approval of the Employer, may delegate any of his duties and responsibilities to other person(s), except to the Adjudicator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

5. Communications

All certificates, notices or instructions to be given to the Contractor by Employer/ Engineer shall be sent on the address or contact details given by the Contractor of Bid. The address and contact details for communication with the Employer/ Engineer shall be as per the details given in Contract Data. Communications between parties that are referred to in the conditions shall be in writing. The Notice sent by facsimile (fax) or other electronic means shall be effective on confirmation of the transmission. The Notice sent by Registered post or Speed post shall be effective on delivery or at the expiry of the normal delivery period as undertaken by the postal service.

6. Subcontracting

Unless specifically mentioned in the contract subletting will not be allowed. Subletting, where otherwise provided by the contract shall not be more than 25% of the contract price.

The Contractor shall not be required to obtain any consent from the Employer for:

- a. the sub-contracting of any part of the Works for which the Subcontractor is named in the Contract;
- b. the provision for labour, or labour component.
- c. the purchase of Materials which are in accordance with the standards specified in the Contract.

Beyond what has been stated in clauses 6.1 and 6.2, if the Contractor proposes sub contracting any part of the work during execution of the Works, because of some unforeseen circumstances to enable him to complete the Works as per terms of the Contract, the Employer will consider the following before according approval:

- a. The Contractor shall not sub-contract the whole of the Works.
- b. The permitted subletting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the BMC and shall not relieve the Contractor of any responsibility under the Contract.

The Engineer should satisfy himself before recommending to the Employer whether

- a. the circumstances warrant such sub-contracting; and
- b. the sub-Contractor so proposed for the Work possesses the experience, qualifications and equipment necessary for the job proposed to be entrusted to him.

7. Other Contractors

The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

The Contractor should take up the works in convenient reaches as decided by the Engineer to ensure there is least hindrance to the smooth flow and safety of traffic including movement of vehicles and equipment of other Contractors till the completion of the Works.

8. Personnel

The Contractor shall employ for the construction work and routine maintenance the key personnel including technical personnel named in the Contract Data or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and abilities are substantially equal to those of the personnel stated in the Contract Data.

The Contractor's personnel shall appropriately be qualified, skilled and experienced in their respective trades or occupations. The Engineer shall have authority to remove, or cause to be removed, any person employed on the site or works, who carries out duties incompetently or negligently and persists in any conduct which is prejudicial to safety, health or the protection of the environment.

If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Works in the Contract.

The Contractor shall not employ any retired Gazetted officer who has worked in the Engineering Department of the BMC /State Government and has either not completed two years after the date of retirement or has not obtained BMC/State Government's permission to employment with the Contractor.

9. Employer's and Contractor's Risks

9.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

10. Employer's Risks

10.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot, commotion or disorder (unless restricted to the Contractor's employees) and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

11. Contractor's Risks

11.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks, referred to in clause 11.1, are the responsibility of the Contractor.

12. Insurance

The Contractor at his cost shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

- a) Loss of or damage to the Works, Plant and Materials;
- b) Loss of or damage to Equipment;
- c) Loss of or damage to property (other than the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- d) Personal injury or death.

Insurance policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

Alterations to the terms of insurance shall not be made without the approval of the Engineer.

Both parties shall comply with any conditions of the insurance policies.

If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the

premiums the Employer has paid, from payments otherwise due to the Contractor or if no payment is due, the payment of premiums shall be debt due.

13. Site Investigation Reports

13.1 The Contractor, in preparing the Bid, may rely, at his own risk, on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

14. Queries about the Contract Data

14.1 The Engineer will clarify queries on the Contract Data.

15. Contractor to Construct the Works and Undertake Maintenance (if specified in the tender)

The Contractor shall construct, and install and maintain the Works in accordance with the Specifications and Drawings and as per instructions of the Engineer.

The Contractor shall construct the works with intermediate technology, i.e., by manual means with medium input of machinery required to ensure the quality of works as per specifications. The Contractor shall deploy the equipment and machinery as required in the contract.

The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and byelaws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in future by the State or Central Government or the local authority. Salient features of some of the major laws that are applicable are given below:

The Water (Prevention and Control of Pollution) Act, 1974, this provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the

life and health of animals or plants or of aquatic organisms.

The Air (Prevention and Control of Pollution) Act, 1981, this provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The Environment (Protection) Act, 1986, this provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

The Public Liability Insurance Act, 1991, This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

16. The Works and Routine Maintenance to be completed by the Intended Completion Date

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works and Routine Maintenance, if specified in the tender, in accordance with the Programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

17. Approval by the Engineer

The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with the Specifications and Drawings.

The Contractor shall be responsible for design and safety of Temporary Works.

The Engineer's approval shall not alter the Contractor's responsibility for design and safety of the Temporary Works.

The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

All Drawings prepared by the Contractor for the execution of the temporary or

permanent Works, are subject to prior approval by the Engineer before their use.

18. Safety

The Contractor shall be responsible for the safety of all activities on the Site. He shall comply with all applicable safety requirements and take care of safety of all persons entitled to be on the site and the works. He shall use reasonable efforts to keep the site and the works, both during construction and maintenance, clear of unnecessary obstruction so as to avoid danger to the persons and the users.

Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles. The Electrical staff shall be provided proper insulated tools, Rubber gloves, safety shoes to carry out works in safe manner. Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Power warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole.

Safety Programs:-

- I. Have adequate safety supervision in place to ensure that safety programs set up by the firms/agencies are in compliance with prevalent laws and regulations.
- II. Review safety programs developed by each of the trade firms, prepare and submit a comprehensive safety program.
- III. Monitor day to day implementation of safety procedures.

First Aid Facilities: -

- i. At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.
- ii. The first-aid box shall be distinctly marked with a red cross on white back ground.
- iii. Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.
- iv. Nothing except the prescribed contents shall be kept in the First-aid box.
- v. The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.
- vi. person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.

19. Discoveries

19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

20. Possession of the Site

20.1 The Employer shall handover complete or part possession of the site to the Contractor 7 days in advance of construction programme. At the start of the work, the Employer shall handover the possession of at-least 75% of the site free of all encumbrances, the remaining 25 % of the possession as per contractor's construction programme.

21. Access to the Site

21.1 The Contractor shall allow access to the Site and to any place where work in connection with the Contract is being carried out, or is intended to be carried out to the Engineer and any person/persons/agency authorized by: a. The Engineer b. The Employer or authorized by the Employer.

22. Instructions

The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

The Contractor shall permit the appointed and/or authorized persons to inspect the Site and/or accounts and records of the Contractor and its subcontractors relating to the performance of the Contract, and to have such accounts and records audited by auditors appointed, if so required. The Contractor's attention is invited to Clause of 'Fraud and Corruption', which provides, inter alia, that acts intended to materially impede the exercise of the inspection and audit rights provided for under the Clause & constitute a obstructive practice subject to contract termination.

Engineer to have power to issue further drawings or instructions:

The Engineer shall have the power and authority from time to time and at all times to make and issue such further drawings and to give such further instructions and directions as may appear to him necessary or proper for the guidance of the contractor and the good and sufficient execution of the works according to terms of the specifications and Contractor shall receive, execute, obey and be bound by the same, according to the true intent and meaning thereof, as fully and effectually as though the same had accompanied or had been mentioned or referred to in the specification, and the Engineer may also alter or vary the levels or position of nature of works contemplated by the specifications, or may order any of the works contemplated thereby to be

omitted, with or without the substitution of any other works in lieu thereof, or may order any work or any portion of work executed or partially executed, to be removed, changed or altered, added if needful, may order that other works shall be substituted instead thereof and difference of expense occasioned by any such diminution or alteration so ordered and directed shall be added to or deducted from the amount of this Contract, as provided under condition no. 10 (a) hereinafter.

No work which radically changes the original nature of the Contract shall be ordered by the Engineer and in the event of any deviation being ordered which in the opinion of the Contractor changes the original nature of Contract he shall nevertheless carry it out and disagreement as to the nature of the work and the rate to be paid therefore shall be resolved in accordance with condition no.13d.

The time for completion of the Works, shall be in even of any deviations resulting in additional cost over the contract price being ordered, be extended or reduced reasonably by the Engineer. The Engineer's decision in this case shall be final.

Section B : Time Control

23. Programme

Within the time stated in the Contract Data, the Contractor shall submit to the Engineer for approval a Programme, including Environment Management Plan showing the general methods, arrangements, order, and timing for all the activities in the Works, along with monthly cash flow forecasts for the construction of works.

After the completion of the construction works, the programme for the Routine Maintenance Work, showing the general methods, arrangements, order and timing for all the activities involved in the Routine Maintenance will also be submitted by the Contractor to the Engineer for approval if specified in the tender. The programme for Routine Maintenance will be submitted in each year for the period of Maintenance.

The Contractor shall submit the list of equipment and machinery being brought to site, the list of key personnel being deployed, the list of machinery/ equipments being placed in field laboratory and the location of field laboratory along with the Programme. The Engineer shall cause these details to be verified at each appropriate stage of the programme.

An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities.

The Contractor shall submit to the Engineer for approval an updated Programme at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme shall show the effect of Variations and Compensation Events.

24. Extension of Time In Contracts : Subject to any requirement in the contract as to completion of any portions or portions of the works before completion of the whole, the contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:

a)Extension attributable to BMC

(i) Extension Due To Modification: If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise and in any case **should not be less than 30 days before the expiry of the date fixed for completion of the works.**

(ii) Extension For Delay Due To BMC: In the event of any failure or delay by the BMC to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the BMC due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefore, but in any such case, the BMC may grant such extension(s) of the completion date as may be considered reasonable.

Note: For extension of time period as governed in (i) and (ii) above, any modifications in design/drawings, specifications, quantities shall be needed to be justified with recorded reasons with approval of Ch.Eng. for not anticipating the same while preparing estimates and draft tender.

(b) **Extension of Time For Delay Due To Contractor** : The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed no later than the date(s) / the programme for completion of work as specified in the contract. If the contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in above as (a.i) and (a.ii), the BMC may, if satisfied that the works can be completed by the contractor within reasonable short time thereafter, allow the contractor for further extension of time as the Engineer may decide. On such extension the BMC will be entitled without prejudice to any other right and remedy available on that behalf, to recover the compensation as governed by Clause 8(e) of GCC

For the purpose of this Clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued.

Further, competent authority while granting extension to the currency of contract under Clause (b) of as above may also consider levy of penalty, as deemed fit based on the merit of the case. Also, the reasons for granting extension shall be properly documented.

25. Delays Ordered by the Engineer

25.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works. Delay/delays totaling more than 30 days will require prior written approval of the DMC/AMC.

26. Management Meetings

The Engineer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the plans for progress of the Works.

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

C. Quality Control

Work to be open to Inspection and Contractor or Responsible agent to be present

All works under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Eng-in-charge and his subordinates and the contractor shall at all times during the usual working hours, at all other times, during the

usual working hours and at all other times at which reasonable notice of the intention of the Eng- in- charge and his subordinates to visit the works shall have been given to the contractor, either himself be present to receive orders and instruction or have responsible agent duly accredited in writing present for that purpose. Order given to the contractors' duly authorized agent shall be considered to have the same force and effect as if they had been given to the contractor himself.

Notice To Be Given Before Work Is Covered Up

The contractor shall give not less than ten days' notice in writing to the Eng-In-Charge or his subordinate in-charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimension thereof taken before the same is so covered up or placed beyond the reach of measurements and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Eng-In-Charge or his subordinate in-charge of the work, and if any work shall be covered up or placed beyond the reach of measurement, without such notice having been given or consent obtained the same shall be uncovered at the contractors expenses, and in default thereof no payment or allowance shall be made for such work or for the materials with which the same was executed.

Works to be executed in accordance with specifications / drawings / orders etc :

The contractor shall execute the whole and every part of the work the most substantial and workman like manner and both has regards material and every other respect in strict accordance with specifications. The contractor shall also confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer In-charge and lodged in his office and to which the contractor shall be entitled to have access for the purpose of inspection at such office, or on the site or work during office hours. The contractor shall be entitled to receive three sets of contract drawings and working drawings as well as one certified copy of the accepted tender along with the work order free of cost.

~~Ready Mix Concrete/Asphalt Mix~~

- ~~i) The contractor shall have to arrange Ready Mix concrete (RMC)/Asphalt from RMC/ASPHALT producing plants registered with BMC~~
- ~~ii) The contractor shall, within a 7 days of award of the work, submit a list of at least three RMC/Asphalt producers with details of such plants including details and number of transit, mixers & pumps etc. to be deployed indicating name of owner/company, its location, capacity, technical establishment. The Engineer in-charge will reserve right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user's end.~~
- ~~iii) The Engineer in-charge reserves the right to exercise control over the:-~~

- ~~a) Calibration check of the RMC/Asphalt plant.~~
- ~~b) Weight and quantity check on the ingredients, water and admixtures added for batch mixing for RMC plants.~~
- ~~c) Time of mixing of concrete/grade of asphalt.~~
- ~~d) Testing of fresh concrete/asphalt mix, recording of results and declaring the mix fit or unfit for use. This will include continuous control on the work ability during production and taking corrective action, if required.~~
- ~~e) For exercising such control, the Engineer in charge shall periodically depute his authorized representative at the RMC/Asphalt plant. It shall be responsibility of the contractor to ensure that all necessary equipment, manpower & facilities are made available to Engineer in charge and or his authorized representative at RMC/Asphalt plant.~~
- ~~f) All required relevant records of RMC/Asphalt mix shall be made available to the Engineer in charge or his authorized representative. Engineer in charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of material production & transportation of concrete mix which shall be binding on the contractor & the RMC/Asphalt plant. Only concrete as approved in design mix by Engineer in charge shall be produced in RMC plant and transported to the site.~~
- ~~g) The contractor shall have to produce a copy of chalan receipts/SCADA reports/VTS reports as issued by the RMC/Asphalt plant as a documentary proof in lieu of supply of RMC/Asphalt mix before releasing payment.~~

28. Identifying Defects

The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

The Contractor shall permit the Employer's technical person(s) to check the Contractor's work and notify the Engineer and Contractor if any defects that are found.

29. Tests

For carrying out mandatory tests as prescribed in the specifications, the Contractor shall establish field laboratory at the location decided by Engineer. The field laboratory will have minimum of equipments as specified in the Contract Data. The contractor shall be solely responsible for :

- a. Carrying out the mandatory tests prescribed in the Specifications, and
- b. For the correctness of the test results, whether performed in his laboratory or elsewhere.

If the Engineer instructs the Contractor to carry out a test not specified in the Specification/ Quality Assurance Handbook to check whether any work has a Defect and the test shows that

it does, the Contractor shall pay for the test and any samples. If there is no defect, the test shall be a compensation event.

When required by the Engineer-in-charge the contractor(s) shall supply for the purpose of testing samples of all materials proposed to be used in the works. Samples submitted either to govern bulk supplies or required for testing before use shall be in suitable packages to contain them and shall be provided free of charge by the contractor. The cost of testing shall be borne by the contractor even if the result of the sample confirm or do not confirm to the relevant BIS code specifications.

- i. All expenditure required to be incurred for taking the samples conveyance, packing shall be borne by the contractor himself.
- ii. The failed material shall be removed from the site by the contractor at his own cost within a week time of written order of the Engineer-in-charge.

Setting of Site Laboratories:

~~Contractors shall set up a laboratory at site before commencement of work at their cost for performing various tests and at least the following machines and equipments shall be provided therein—~~

- ~~1. Set of Sieves as per I.R.C./I.S.~~
- ~~2. Compressive Testing Machine (For new works)~~
- ~~3. Oven, Electrically Operated~~
- ~~4. Weighing Balance (20 kg capacity)~~
- ~~5. 3 m straight edge~~
- ~~6. Sieve shaker~~
- ~~7. First Aid Box~~
- ~~8. Measuring Jar (for silt content)~~
- ~~9. Other Machines/apparatus as may be directed by the Engineer.~~
- ~~10. Vernier Caliber~~
- ~~11. Level/Theodolite~~

~~All the test records shall be maintained in the site office and made available as and when required. The laboratory must be established within 15 days from the date of receipt of the orders from Engineer In charge. On failure to do so, a penalty of Rs 1000/- per day shall be imposed.~~

The contractor shall install testing equipment at site. The contractor shall ensure and certify the calibration of the equipment so installed and shall maintain the same in working order throughout the period of construction. The contractor shall also provide necessary technically qualified experienced trained staff for carrying out such tests for using such equipment. The tests shall be carried out under the supervision of the Engineer-in-charge. The calibration shall be checked every twelve months as directed by Engineer-in-charge.

30. Correction of Defects noticed during the Defects Liability Period.

(a) The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and ends after five years. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

(b) Every time notice of Defect/Defects is given, the Contractor shall correct the notified Defect/Defects within the duration of time specified by the Engineer's notice.

(c) The Engineer may issue notice to the Contractor to carry out removal of defects or deficiencies, if any, noticed in his inspection, or brought to his notice. The Contractor shall remove the defects and deficiencies within the period specified in the notice and submit to the Engineer a compliance report.

31. Uncorrected Defects and Deficiencies

If the Contractor has not corrected a Defect pertaining to the Defect Liability Period under clause and deficiencies in maintenance, to the satisfaction of the Engineer, within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect or deficiency corrected, and the Contractor shall pay this amount, on correction of the Defect or deficiency by another agency.

SECTION D : Cost Control

32. Variations

The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order, in writing, Variations within the scope of the Works he considers necessary or advisable during the progress of the Works. Such Variations shall form part of the Contract and the Contractor shall carry them out and include them in updated Programmes produced by the Contractor. Oral orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

33. Payments for Variations

If rates for Variation items are specified in the Bill of Quantities, the Contractor shall carry out such work at the same rate.

The rate for Extra/Excess shall be governed by clause 10.A of Standard General Condition of Contract

34. Cash Flow Forecasts

When the Programme is updated, the Contractor shall provide the Engineer with an updated cash flow forecast.

35. Payment Certificates

The payment to the Contractor will be as follows for construction work:

(a) A bill shall be submitted by the Contractor on completion of supply as intimated to them or before the date fixed by the Engineer In-charge for supply received as per the +, and the Engineer In-charge shall take or cause to be taken requisite measurement for the purpose of having the same verified and the claim, so far as it is admissible, shall be adjusted, if possible, within 10 days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer In-charge may depute a subordinate to measure up the said work in the presence of the contractor or his duly authorized agent whose counter signature to the measurement list shall be sufficient warrant, and Engineer In-Charge may prepare a bill from such list which shall be binding on the contractor in all respects.

(b) The Engineer shall check the Contractor's supply statement within 14 days and certify the amount to be paid to the Contractor.

(c) The value of work executed shall be determined, based on measurements by the Engineer.

(d) The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed. The 10% amount from every certified bill shall be kept in deposit against vigilance NOC for the subject work.

(e) The value of work executed shall also include the valuation of Variations and Compensation Events.

(f) The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

(g) The contractor shall submit all bills on the printed forms at the office of Incharge. The charges to be made in the bills shall always be entered at the rates specified in tender.

36. Payments

Payments shall be adjusted for deductions for advance payments, retention, security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts certified by the Engineer within 15 days of the date of each certificate.

All sums payable by a contractor by way of compensation under any of these conditions, shall be considered as a reasonable compensation to be applied to the use of BMC without reference to the actual loss or damage sustained and whether any damage has or has not been sustained.

No payment shall be made for any work estimated to cost less than Rupees One Thousand till after the whole of work shall have been completed and the certificate of completion given. But in the case of works estimated to cost more than Rs. One Thousand, the contractor shall on

submitting a monthly bill therefore be entitled to receive payment proportionate to the part of the work than approved and passed by the Engineer In-charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. All such intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for work actual done and completed and shall not preclude the Engineer In-charge from requiring any bad, unsound, imperfect or unskillful work to be removed or taken away and reconstructed or re-erected nor shall any such payment be considered as an admission of the due performance of the contract or any part thereof in any respect or the offering of any claim not shall it conclude, determine or effect in any other way, the powers of the Engineer In-charge as to the final settlement and adjustment of the accounts or otherwise, or in any other way vary or effect the contract. The final bill shall be submitted by the Contractor within one month of the date fixed for the completion of the work otherwise the Engineer In-charge's certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties.

37. Compensation: The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor for not having given early warning or not having co-operated with the Engineer.

38. Tax : G.S.T. and other state levies/cess which are not subsumed under GST will be applicable. The tenderer shall quote inclusive of all taxes. It is clearly understood that BMC will not bear any additional liability towards payment of any Taxes and Duties.

Wherever the services to be provided by the tenderer fall under Reverse Charges Mechanism, the price quoted shall be exclusive of GST, but inclusive of Taxes/Duties/Cess other than GST, if any.

Rates accepted by BMC shall hold good till completion of work and no additional individual claim shall be admissible on account of fluctuation in market rates: increase in taxes/any other levies/toll etc. except that payment/ recovery for overall market situation shall be made as per price variation.

39. Currencies

All payments will be made in Indian Rupees only.

40. Liquidated Damages

Both, the Contractor and the Employer have agreed that it is not feasible to precisely estimate the amount of losses due to delay in completion of works and the losses to the public and the economy, therefore, both the parties have agreed that the Contractor shall pay liquidated damages to the Employer and not by way of penalty, at the rate per week or part thereof stated in the Contract Data for the period that the Completion Date is later than the Intended Completion Date.

Liquidated damages at the same rates shall be withheld if the Contractor fails to achieve the milestones prescribed in the Contract Data. However, in case the Contractor achieves the next milestone, the amount of the liquidated damages already withheld shall be restored to the Contractor by adjustment in the next payment certificate. The Employer and the contractor have agreed that this is a reasonable agreed amount of liquidated damage. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's other liabilities.

41. Cost of Repairs

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at his cost if the loss or damage arises from the Contractor's acts or omissions.

SECTION E : Finishing the Contract

42. Completion of Construction and Maintenance

The Contractor shall request the Engineer to issue a certificate of completion of the construction of the works, and the Engineer will do so upon deciding that the works is completed. This shall be governed as per clause no.8(g) of Standard General Conditions of Contract.

43. Taking Over

The Employer shall take over the works within seven days of the Engineer issuing a certificate of completion of works. The Contractor shall continue to remain responsible for its routine maintenance during the maintenance period if specified in the contract.

44. Final Account

Final joint measurement along with the representatives of the contractor should be taken recorded and signed by the Contractors. Contractors should submit the final bill within 1 month of physical completion of the work

If the contractor fails to submit the final bill within 1 month, the BMC staff will prepare the final bill based on the joint measurement within next 3 months. Engineer's decision shall be final in respect of claims for defect and pending claims against contractors.

No further claims should be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payment of those items of the bills in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by the Commissioner shall be made within a reasonable period as may be necessary for the purpose of verification etc.

After payment of the final bill as aforesaid has been made, the contractor may, if he so desires, reconsider his position in respect of a disputed portion of the final bills and if he fails to do so

within 84 days, his disputed claim shall be dealt with as provided in the contract.

A percentage of the retention money, over and above the actual retention money as indicated below shall be held back from payments till the finalization of final bill to be submitted as per above and will be paid within 30 days of acceptance of the final bill.

Sr.no.	Amount of Contract Cost	Minimum Payable Amount in final bill
1	Upto Rs.5 Crs.	Rs.10 Lacs or final bill whichever is more
2	Upto Rs.25 Crs.	Rs.1 Crore or final bill amount whichever is more
3	Upto Rs. 50 Crs.	Rs.2 Crores or final bill amount whichever is more
4	Upto Rs.100 Crs.	Rs.4 Crore or final bill amount whichever is more
5	More than Rs.100 Crs..	Rs.7 Crore or final bill amount whichever is more

The contractors have to submit the bill for the work carried out within 15 days from the date of completion of the work to the respective executing department. If the contractor fails to submit their bills to concerned executing department, penalty or action as shown below will be taken for each delayed bill:-

After 15 days from the date of completion/running bill up to certain date, up to next 15 days i.e. up to 30 days	Equal to 5% of bill amount
Next 15 days up to 45 days from the date of completion/running bill up to specified date	Equal to 10% of bill amount
If not submitted within 45 days from the date of completion/ R.A. bill	Bill will not be admitted for payment.

45. Operating and Maintenance Manuals

If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

46. Termination

The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

Fundamental breaches of Contract shall include, but shall not be limited to, the following:

- a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;
- b) the Contractor is declared as bankrupt or goes into liquidation other than for approved reconstruction or amalgamation;
- c) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time

- determined by the Engineer;
- d) the Contractor does not maintain a Security, which is required;
 - e) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in relevant clause.
 - f) ~~the Contractor fails to provide insurance cover as required under relevant clause~~
 - g) if the Contractor, in the judgment of the Employer, has engaged in the corrupt or fraudulent practices as defined in GCC in competing for or in executing the Contract.
 - h) if the Contractor fails to set up a field laboratory with the prescribed equipment, within the period specified in the Contract Data; and
 - i) any other fundamental breaches as specified in the Contract Data.
 - j) if the Contractor fails to deploy machinery and equipment or personnel as specified in the Contract Data at the appropriate time.

When either party to the contract gives notice of a breach of contract to the Engineer for a cause other than those listed above, the Engineer shall decide whether the breach is fundamental or not.

Notwithstanding the above, the Employer may terminate the Contract for convenience.

If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

47. Payment upon Termination

If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for value of the work done and materials ordered less liquidated damages, if any, less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be recovered from the security deposit, and performance security. If any amount is still left un-recovered it will be a debt due from the Contractor to the Employer

If the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the Contract, and less taxes due to be deducted at source as per applicable law.

48. Property

All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer for use for completing balance construction work if the Contract is terminated because of the Contractor's default, till the Works is completed after which it will be transferred to the Contractor and credit, if any, given for its use.

49. Release from Performance

If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

A) Other Conditions of Contract

50. Labour

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the number of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the Engineer may require.

51. Compliance with Labour Regulations

(a) During continuance of the Contract, the Contractor and his sub-Contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications, act like minimum wages and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority.

(b) Furthermore, the Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor including his amount of performance guarantee. The Employer/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

(c) The Contractor shall require his employees to obey all applicable laws, including those concerning safety at work.

(d) The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

52. Drawings and Photographs of the Works

The Contractor shall do photography / video photography of the site firstly before the start of

the work, secondly mid-way in the execution of different stages of work as required by Engineer In-charge and lastly after the completion of the work. No separate payment will be made to the Contractor for this.

The Contractor shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Engineer in writing. No photograph of the works or any part thereof or plant employed thereon, except those permitted under above clause, shall be taken or permitted by the Contractor to be taken by any of his employees or any employees of his sub-Contractors without the prior approval of the Engineer in writing. No photographs/ Video photography shall be published or otherwise circulated without the approval of the Engineer in writing.

53. The Apprentices Act, 1961

The Contractor shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so, he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

54 Contract Document

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) Addendum to Bid; if any
- 5) Tender Document
- 6) The Bill of Quantities:
- 7) The Specification:
- 8) Detailed Engineering Drawings
- 9) Standard General Conditions of Contracts (GCC)
- 10) All correspondence documents between bidder/contractor and BMC.

55. Conflict of Interest

The Applicant shall not have a conflict of interest (the “Conflict of Interest”) that affects the Bidding Process. Any Applicant found to have a Conflict of Interest shall be disqualified. An Applicant shall be deemed to have a Conflict of Interest affecting the Bidding Process, if

1. A constituent of such Applicant is also a constituent of another Applicant; or
2. Such Applicant has the same legal representative for purposes of this Application as any other Applicant; or

3. Such Applicant, or any Associate thereof has a relationship with another Applicant, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Application of either or each other; or

4. The Applicant shall be liable for disqualification if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Applicant, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to the Project. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Applicant, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this TENDER. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

56. Applications and costs thereof

No Applicant shall submit more than one Application for the Project. An applicant applying individually shall not be entitled to submit another application either individually. The Applicant shall be responsible for all of the costs associated with the preparation of their Applications and their participation in the Bid Process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

57. Acknowledgment by Applicant

It shall be deemed that by submitting the Application, the Applicant has:

- a. made a complete and careful examination of the tender;
- b. received all relevant information requested from the Authority;
- c. accepted the risk of inadequacy, error or mistake in the information provided in the tender or furnished by or on behalf of the Authority relating to any of the matters referred;
- d. Agreed to be bound by the undertakings provided by it under and in terms hereof.

"The Authority" shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the TENDER or the Bidding Process, including any error or mistake therein or in any information or data given by the Authority.

58. Right to accept or reject any or all Applications/ Bids

Notwithstanding anything contained in this TENDER, "The Authority" reserves the right to accept or reject any Application and to annul the Bidding Process and reject all Applications/ Bids, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that the Authority rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

“The Authority” reserves the right to reject any Application and/ or Bid if:

- (a) at any time, a material misrepresentation is made or uncovered, or
- (b) the Applicant does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the Application.

In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of subsistence thereof including the concession thereby granted by “The Authority”, that one or more of the pre-qualification conditions have not been met by the Applicant, or the Applicant has made material misrepresentation or has given any materially incorrect or false information, the Applicant shall be disqualified forthwith if not yet appointed as the Successful Bidder either by issue of the LOA (Letter of Approval) or entering into of the Agreement, and if the Applicant has already been issued the LOA or has entered into the Concession Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this TENDER, be liable to be terminated, by a communication in writing by “The Authority” to the Applicant, without the Authority being liable in any manner whatsoever to the Applicant and without prejudice to any other right or remedy which the Authority may have under this TENDER, the Bidding Documents, the Concession Agreement or under applicable law.

“The Authority” reserves the right to verify all statements, information and documents submitted by the Applicant in response to the TENDER. Any such verification or lack of such verification by the Authority shall not relieve the Applicant of its obligations or liabilities hereunder nor will it affect any rights of the Authority there under.

59. The bid shall be rejected if the bidder-

- a. Stipulates the validity period less than 180 days.
- b. Stipulates own condition/conditions.
- c. Does not fill and (digital) sign undertaking forms, which are incorporated, in the document.

60. Clarifications

Applicants requiring any clarification on the tender may notify “the Authority” in writing or by fax or e-mail. They should send in their queries before the date specified in the header data. “The Authority” shall Endeavor to respond to the queries within the period specified therein. The responses will be sent by fax and/or e-mail. The Authority will forward all the queries and its responses thereto, to all purchasers of the TENDER without identifying the source of queries.

“The Authority” shall Endeavor to respond to the questions raised or clarifications sought by the Applicants. However, the Authority reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring the Authority to respond to any question or to

provide any clarification, but not later than the date provided in header data.

“The Authority” may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Applicants. All clarifications and interpretations issued by the Authority shall be deemed to be part of the tender. Verbal clarifications and information given by Authority or its employees or representatives shall not in any way or manner be binding on the Authority.

61. Amendment of tender

At any time prior to the deadline for submission of Application, the Authority may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the tender by the issuance of Addendum.

Any Addendum thus issued will be sent in writing/ Fax/ Email to all those who have purchased the tender.

In order to afford the Applicants a reasonable time for taking an Addendum into account, or for any other reason, the Authority may, in its sole discretion, extend the Application Due Date.

Preparation and Submission of Application

62. Language

The Application and all related correspondence and documents in relation to the Bidding Process shall be in English language. Supporting documents and printed literature furnished by the Applicant with the Application may be in any other language provided that they are accompanied by translations of all the pertinent passages in the English language, duly authenticated and certified by the Applicant. Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the English language translation shall prevail.

63. Format and signing of Application

The Applicant shall provide all the information sought under this TENDER. The Authority will evaluate only those Applications that are received in the required formats and complete in all respects. Incomplete and /or conditional Applications shall be liable to rejection. The Applicant will upload bid in One Folder in electronic form which shall contain the scanned certified copies of the documents given below and the documents uploaded has to be digitally signed by the bidder. These copies shall be certified by Practicing Notary approved by the Govt. of Maharashtra or Govt. of India with his stamp, clearly stating his name & registration number, except where original documents are demanded

64. Marking of Applications

The Applicant shall submit the Application in the format specified at Appendix-I, together with the documents, upload in folder as “VENDOR” together with their respective enclosures Applications submitted by fax, telex, telegram shall not be entertained and shall be rejected

outright.

65. Late Applications

Applications received by the Authority after the specified time on the Application Due Date shall not be eligible for consideration and shall be summarily rejected.

66. Confidentiality

Information relating to the examination, clarification, evaluation, and recommendation for the short-listed qualified Applicants shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the Authority in relation to or matters arising out of, or concerning the Bidding Process. The Authority will treat all information, submitted as part of Application, in confidence and will require all those who have access to such material to treat the same in confidence. The Authority may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or the Authority or as may be required by law or in connection with any legal process.

67. Clarification of Financial Bids

To assist in the examination, evaluation and comparison of Bids, the Engineer may, at his discretion, ask any bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing or by post/facsimile/e- mail. No Bidder shall contact the Engineer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. Any effort by the Bidder to influence the Engineer in the Engineer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

68. Inspection of site and sufficiency of tender:

1. The Contractor shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his tender as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the quantities and nature of the work and materials necessary for the completion of the works and means of access to the site, the accommodation

he may require and in general shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his tender. He shall also take into consideration the hydrological and climatic conditions.

2. The Employer may make available to the Contractor data on hydrological and sub- surface conditions as obtained by or on his behalf from investigations relevant to the works but the Contractor shall be responsible for his own interpretation thereof. The contractor shall engage his investigating agency with prior approval of the Engineer from the approved list of such agencies by BMC or Govt at his cost initially before commencing actual work and which shall be reimbursed immediately subject to satisfaction of the Engineer for faithful compliance and submission of required data regarding such investigation within specified time.

3. The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the schedule of works / items / quantities, or in Bill of Quantities, which rates and prices shall, except as otherwise provided cover all his obligations under the Contract and all matters and things necessary for proper completion and maintenance of the works. No extra charges consequent on any misunderstanding.

4. **Not Foreseeable Physical Obstructions or Conditions:** If, however, during the execution of the Works the Contractor encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his opinion, not foreseeable by an experienced contractor, the Contractor shall forthwith give notice thereof to the Engineer. On receipt of such notice, the Engineer shall, if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced contractor, after due consultation with the Contractor, determine: any extension of time to which the Contractor is entitled and the amount of any costs which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price. and shall notify the Contractor accordingly. Such determination shall take of any instruction which the Engineer may issue to the Contractor in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Contractor may take in the absence of specific instructions from the Engineer. However such costing shall be got approved by the competent authority as governed vide rules prevailing with authority

5. **Office for the Engineer (Works costing upto Rs.50 Lakhs)**

The Contractor shall at his own cost and to satisfaction of the Engineer provide a small temporary

office, at the work-site which will include tables, chairs and lockers for keeping the records. He shall also make necessary arrangements for drinking water, telephone with a pre-requisite of e-governance and electronic communication. These offices are not to be allowed on public roads without the written instruction of the Engineer. These offices should be preferably located within 50 to 500 m of the worksite. In case the office is more than 500m away from the worksite, the contractor is to provide conveyance for Municipal Staff.

6. Office for the Engineer (Works costing above Rs.50 lakhs)

The Contractor shall at his own cost and to satisfaction of the Engineer provide a temporary office at the work-site which will include tables, chairs and lockers for keeping the records. He shall also make necessary arrangements for drinking water, latrines, with doors, windows, locks, bolts and fastenings sufficient for security for the Engineer, and his subordinates, as close to the works from time to time in progress as can be conveniently arranged, and shall at his own cost furnish the office with such chairs, tables, lockers, locks and fastenings as may be required by the Engineer, and no expense of any kind in connection with the erection or upkeep of the offices or fittings shall be borne by the Corporation, but all such work shall be carried out by the Contractor and the expenses thereof defrayed by him. The Contractor shall also make water connections and fit up stand pipe with a bib tap at each office. The latrines and the water connections shall be subject to all the conditions herein elsewhere laid down for temporary water connection and latrines generally with all requisite equipments for e-governance and electronic and digital communication. These offices are not to be allowed on public roads without the written instruction of the Engineer. These offices should be preferably located within 50 to 500 m of the worksite. In case the office is more than 500m away from the worksite, the contractor is to provide conveyance. Also, for staff working beyond working hours the contractor has to provide conveyance.

7. Permission for provision and removal of office on completion of work: The tenderer shall obtain permission for provision of site office, cement go-down, store, etc. on payment of necessary cost implication. The cement go-down, Watchman cabins, etc. shall be provided as directed and shall be removed by the Tenderers on completion of the work at their cost. It is binding on the Tenderer to fulfill requirements of Environmental Authorities. The location of such office shall be finalized and got approved from the Engineer before erection/commencement work.

8. Contractor's office near works: The Contractor shall have an office near the works at which notice from the Commissioner or the Engineer may be served and shall, between the hours of sunrise and sunset on all working days, have a clerk or some other authorized person always

present at such office upon whom such notices may be served and service of any notices left with such clerk or other authorized person or at such office shall be deemed good service upon the Contractor and such offices shall have pre-requisite facilities for e- governance.

69. Official Secrecy:

The Contractor shall of all the persons employed in any works in connection with the contract that the India Official Secrets Act 1923 (XIX of 1923) applies to them and will continue to apply even after execution of the said works and they will not disclose any information regarding this contract to any third party. The contractor shall also bring into notice that, any information found to be leaked out or disclosed the concern person as well as the Contractor will be liable for penal action; further the Corporation will be at liberty to terminate the contract without notice.

70. Subsequent Legislation:

If on the day of submission of bids for the contract, there occur changes to any National or State stature, Ordinance, decree or other law or any regulation or By-laws or any local or other duly constituted authority or the introduction of any such National or State Statute, Ordinance, decree or by which causes additional or reduced cost to the Contractor, such additional or reduced cost shall, after due consultation with the Contractor, be determined by the concerned Engineering Department of BMC and shall be added to or deducted from the Contract Price with prior approval of competent authority and the concerned Engineering Department shall notify the Contractor accordingly with a copy to the Employer. BMC reserve the right to take decision in respect of addition / reduction of cost in contract.

71. Patent, Right and Royalties:

The contractor shall save harmless and indemnify the Corporation from and against all claims and proceedings for or on account of infringement of any Patent rights, design trademark or name of other protected rights in respect of any constructional plant, machine work, or material used for or in connection with the Works or any of them and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. Except where otherwise specified, the contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the works or any of them.

72. Payments, Tax and Claims: The limit for unforeseen claims

Under no circumstances whatever the contractor shall be entitled to any compensation from BMC on any account unless the contractor shall have submitted a claim in writing to the Eng-in-charge within 1 month of the case of such claim occurring.

No interest for delayed payments due to disputes, etc:

It is agreed that the Brihanmumbai municipal corporation or its Engineer or Officer

shall not be liable to pay any interest or damage with respect of any moneys or balance which may be in its or its Engineer's or officer's hands owing to any dispute or difference or claim or misunderstanding between the Brihanmumbai municipal corporation(BMC) or its Engineer or Officer on the one hand and the contractor on the other, or with respect to any delay on the part of the Municipal Corporation of Greater Bombay or its Engineer or Officers in making periodical or final payments or in any other respect whatever.

73. Settlement of Disputes: Termination of contract for death

If the Contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the Contractor is a partnership concern and one of the legal representative of the individual Contractor or the proprietor of the proprietary concern and in case of partnership, the surviving partners, are capable of carrying out and completing the contract, the Commissioner shall be entitled to cancel the contract as to its uncompleted part without the Corporation being in any way liable to payment of any compensation to the estate of the deceased Contractor and or to the surviving partners of the Contractor's firm on account of the cancellation of the contract. The decision of the Commissioner that the legal representative of the deceased Contractor or surviving partners of the Contractor's firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation the Commissioner shall not hold estate of the deceased Contractor and or surviving partners of the Contractor's firm liable in damages for not completing the contract.

Settlement of Disputes:

If any dispute or differences of any kind whatsoever other than those in respect of which, the decision of any person is, by the Contract, expressed to be final and binding) shall arise between the Employer and the Contractor or the Engineer and the Contractor in connection with or arising out of the Contract or carrying out of the Works (Whether during the progress of the Works or after their completion and whether before or after the termination, abandonment or breach of the Contract) it, the aggrieved party may refer such dispute within a period of 7 days to the concerned Addl. Municipal Commissioner who shall constitute a committee comprising of three officers i.e. concerned Deputy Municipal Commissioner or Director (ES&P), Chief Engineer other than the Engineer of the Contract and concerned Chief Accountant. The Committee shall give decision in writing within 60 days. Appeal on the Order of the Committee may be referred to the Municipal Commissioner within 7 days. Thereafter the Municipal Commissioner shall constitute a Committee comprising of three Addl. Municipal Commissioners including Addl. Municipal Commissioner in charge of Finance Department. The Municipal Commissioner within a period of 90 days after being requested to do so shall give written notice of committee's decision to the Contractor. Save as herein provided such decision

in respect of every matter so referred shall be final and binding upon both parties until the completion of the works, and shall forthwith be given effect to by the Contractor who shall proceed with the works with due diligence, whether he requires arbitration as hereinafter provided or not. If the Commissioner has given written notice of the decision to the Contractor and no Claim to arbitration has been communicated within a period of 90 days from receipt of such notice the said decision shall remain final and binding upon the Contractor.

74. Arbitration and Jurisdiction:

If the Commissioner shall fail to give notice of the decision as aforesaid within a period of 90 days after being requested as aforesaid, or if the Contractor be dissatisfied with any such decision, then and in any such case the Contractor may within 90 days after receiving notice of such decision or within 90 days after the expirations 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 Crore Only), any dispute arising out of or in connection with this contract, including any question regarding its existence, validity of 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 hereto and the expenses of the arbitral 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 Brihan Mumbai. The language of 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/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"). In case of any claim, dispute or difference arising in respect of a contract, the cause of action thereof shall be deemed to have arisen in Mumbai and all legal proceedings in respect of any claim, dispute or difference shall be instituted in a competent court in the City

ii) In case of contract where the contact price and/ or contract value is Rs.5,00,00,000/- (Rupees Five Crore 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.02.02.2017) 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 of Mumbai only.

75. Copyright :

The copyright of all drawings and other documents provided by the Contractor under the contract shall remain vested in the Contractor or his sub-contractors as the case may be the employer shall have a license to use such drawings and other documents in connection with the design, construction, operation, maintenance of the works. At any time the Employer shall have further license without additional payment to the Contractor to use any such drawings or documents for the purpose of making any improvement of the works or enlargement or duplication of any part thereof, provided that such improvement, enlargement, or duplication by itself or in conjunction with any other improvements, enlargements or duplications already made in accordance with the further license does not result in the duplication of the whole works.

76. Receipts to be signed in firm’s name by any one of the partners:

Every receipt for money which may become payable or for any security which may become transferable to the Contractor under these present shall, if signed in the partnership name by any one of the partners, be a good and sufficient discharge to the Commissioner and Municipal Corporation in respect of the money or security purporting to be acknowledged thereby, and in the event of death of any of the partners during the pendency of this contract, it is hereby expressly agreed that every receipt by any one of the surviving partners shall, if so signed as aforesaid, be good and sufficient discharge as aforesaid provided that nothing in this clause contained shall be deemed to prejudice or effect any claim which the Commissioner or the Corporation may hereafter have against the legal representatives of any partners so dying or in respect of any breach of any of the conditions thereof, provided also that nothing in this clause contained shall be deemed prejudicial or affect the respective rights or obligations of the Contractors and of the legal representatives of any deceased Contractors interest.

77. Proprietary data

All documents and other information supplied by the Authority or submitted by an Applicant to the Authority shall remain or become the property of the Authority. Applicants are to treat all information as strictly confidential and shall not use it for any purpose other than for

preparation and submission of their Application. The Authority will not return any Application or any information provided along therewith.

78. Correspondence with the Applicant

Save and except as provided in this TENDER, the Authority shall not entertain any correspondence with any Applicant in relation to the acceptance or rejection of any Application.

79. Price Variation Clause

~~The Contractor shall be reimbursed or shall refund to the Corporation as the case may be the variation in the value of the work carried out from time to time, depending on whether the prices of material and labour as a whole rise or fall, and the method adopted for such computations shall be as given below, it being clearly understood that the contractor shall have no claim for being reimbursed on the ground that the price of a particular material or group of materials have risen beyond the limits of the presumptions made in the following paras' however, no price variations shall be made applicable for contracts up to 12 months:~~

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

~~B) — Labour and other materials: For the purpose of this contract and for allowing reimbursement or refund on account of variation of prices of (i) labour, and (ii) materials other than materials mentioned in A above, computation will be based on the formula enunciated below which is based on the presumptions that :~~

~~i) — The general price level of labour, rises or falls in proportion to the rise or fall of consumer price index number 9 (general) for working class in Mumbai.~~

~~ii) — The general price level of materials rises or falls in proportion to rise or fall of whole-sale price index as published by 'Economic Adviser to Govt. of India'.~~

~~iii) — And that the component of labour is to the extent of 30 percent of 88 percent and the component of materials is to the extent of 70 percent of 88 percent of the value of the work carried out. The remaining 12 percent being the presumptive profit of the contractor.~~

~~a) — Formula for Labour component:~~

~~b) — Formula for Material component :~~

~~Where —~~

$$VL = \frac{(0.88 R) \times 30}{100} \times \frac{(I - IO)}{IO}$$

$$VM = \frac{(0.88 R \times 70 - C)}{100} \times \frac{(W - WO)}{WO}$$

VL = Amount of price variation to be reimbursed or claimed as refund on account of general rise or fall of index referred to above.

I = Consumer Price Index number of working class for Mumbai (declared by the Commissioner of Labour and Director of Employment, Mumbai) applicable to the period under reference (base year ending 2004-05 as 100 i.e. new series of indices).

IO = Consumer price index number for working class for Mumbai (declared by the Commissioner of labour and Director of Employment, Mumbai) prevailing, on the day of 28 days prior to the date of submission of the tender.

VM = The amount of price variation to be reimbursed or claimed as refund on account of general rise or fall of wholesale price index for period under reference.

W = Average wholesale price index as published by Economic Adviser to Govt. of India applicable to the period under reference.

WO = Wholesale price index as stated above prevailing on the day of 28 days prior to the date of submission of the tender.

R = Total value of the work done during the period under reference as recorded in the Measurement Book excluding water charges and sewerage charges but including cost of excess in respect of item upto 50 percent.

C = Total value of Controlled materials used for the works as recorded in Measurement Book and paid for at original basic rate plus the value of materials used.

i) The quantity of the Controlled material adopted in working out the value of 'C' shall be inclusive of permitted wastages as / if mentioned in specifications.

ii) The basic rate for the supply of controlled material shall be inclusive of all the components of cost of materials excluding transport charges incurred for bringing the material from place of delivery to the site.

— Computations based on the above formula will be made for the period of each bill separately and reimbursement will be made to (when the result is plus) and refund will claimed from (when the result is minus) the contractor's next bill. The above formulae will be replaced by the formulae in Annexure I as and when mentioned in special conditions of contract.

— The operative period of the contract for application of price variation shall mean the period commencing from the date of commencement of work mentioned in the work order and ending on the date when time allowed for the work order and ending on the date when time

allowed for the work specified in the contract for work expires, taking into consideration, the extension of time, if any, for completion of the work granted by Engineer under the relevant clause of the conditions of contract in cases other than those where such extension is necessitated on account of default of the contractor.

The decision of the Engineer as regards the operative period of the contract shall be final

iii) Where there is no supply of controlled items to contractor the component 'C' shall be taken as zero.

C) Adjustment after completion: If the Contractor fails to complete the works within the time for completion adjustment of prices thereafter until the date of completion of the works shall be made using either the indices or prices relating to the prescribed time for completion, or the current indices or prices whichever is more favorable to the employer, provided that if an extension of time is granted, the above provision shall apply only to adjustments made after the expiry of such extension of time.

D) Price variation will be calculated similarly and separately for extra items and / or excess quantities and provisional sums calculated under Sub Clause 10 (b) A (i) & (ii) and Sub Clause 10(b) B(ii) based on the above formula/formulae in Annexure I as and when mentioned in Special conditions of contract; IO and WO being the indices applicable to the date on which the rates under Sub Clause 10 (a)A (i) & (ii) and Sub Clause 10 (a) B(iii) are fixed. No price variation shall be admissible for FAIR items created during execution.

80. Maximum Price Variation shall be as follows:-

Time Period of Project	Maximum limit of Price Variation
Up to 12 months	No variation allowed
Above 12 months to 24 months	5%
Above 24 months	10%

***Approval of AMC/MC shall be obtained before invitation of tender in case of any changes in above.**

Note: 1) The extension in time period for the projects originally estimated including monsoon results in change of price variation slabs as mentioned above i.e. from first slab to second slab or from second slab to third slab, then the maximum limit of original slab will prevail.

2) Operative period shall mean original or extended time period of contract.

Extension of Time period	Maximum Price Variation
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If original period of 11 months including monsoon extends to 16. The operative period will be 11+5 months.	No variation allowed
If original period of 11 months excluding monsoon extends to 16. The operative period will be 11+5 months.	Maximum 5% variation allowed

Price Variation during Extended Period of Contract:

~~(i) Extension Due To Modification & Extension for delay due to BMC :~~

~~The price variation for the period of extension granted shall be limited to the amount payable as per the Indices. In case the indices increases or decreases, above / below the indices applicable, to the last month of the original or extended period vide clause 8 (l) (a) (i) and (ii) of standard GCC~~

~~(ii) Extension Of Time For Delay Due To Contractor :~~

~~(a) The price variation for the period of extension granted shall be limited to the amount payable as per the Indices in case the indices increase, above the indices applicable, to the last month of the original completion period or the extended period vide above clause 8(l)(a)(i) and (ii) of standard GCC.~~

~~(b) The price variation shall be limited to the amount payable as per the indices, in case the indices decrease or fall below the indices applicable, to the last month of original / extended period of completion period vide above clause 8(l)(b) of standard GCC, then lower indices shall be adopted.~~

~~(iii) Extension of Time For Delay due to reasons not attributable to BMC and Contractor (Reference Cl.8(d) of Standard GCC):~~

~~The price variation for the period of extension granted shall be limited to the amount payable as per the Indices in case the indices increases or decreases, above/below the indices applicable, to the last month of the original period.~~

81. Payment: Interim Payment :

i) Interim bills shall be submitted by the Contractor from time to time (but at an interval of not less than one month) for the works executed. The Engineer shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurement of work.

ii) Payment on account for amount admissible shall be made on the Engineer certifying the sum to which the Contractor is considered entitled by way of interim payment for all the work executed, after deducting there from the amount already paid, the security deposit / retention money and such other amounts as may be deductible or recoverable in terms of the contract.

iii) On request, the contractor will be paid up to 75 percent of the value of the work carried out as an adhoc payment in the first week of next month after deducting there from recoveries on account of advances, interest, retention money, income tax etc. The balance payment due will be paid thereafter.

iv) No interim payment will be admitted until such time the Contractor have fully complied with the requirement of the Condition no.8 (g) and 8 (h) concerning submission and approval of Network Schedule for the works, as detailed in Condition 8 (h). A fixed sum shall be held in abeyance at the time of next interim payment for non-attainment of each milestone in the network and shall be released only on attainment of the said milestone.

v) An interim certificate given relating to work done or material delivered may be modified or corrected by a subsequent interim certificate or by the final certificate. No certificate of the Engineer supporting an interim payment shall of itself be conclusive evidence that any work or materials to which it relates is / are in accordance with the contract.

82. Banning/De-Registration of Agencies of Construction works in BMC

The regulations regarding Demotion/ Suspension Banning for specific period or permanently / De-Registration shall be governed as per the respective condition in Contractor Registration Rules of BMC.

83. JOINT VENTURE(Not Applicable)

In case if Joint Venture is allowed for the Project, the guidelines for JV as follows shall be incorporated in the Tender Document:

- a) Joint Venture should be allowed only when the number of identifiable different works is more than one and/or the estimated cost of tender is more than Rs.100 Crores. JV shall also be allowed for complex technical work below Rs.100 Crores with the approval of concerned AMC
- b) Separate identity/name shall be given to the Joint Venture firm.
- c) Number of members in a JV firm shall not be more than three in normal circumstances, if the work involves only one discipline (say Civil or Electrical). If number of members in JV is required to be more than three, then approval of concerned AMC needs to be sought.
- d) A member of JV firm shall not be permitted to participate either in individual capacity or as a member of another JV firm in the same tender.
- e) The tender form shall be purchased and submitted in the 'name of the JV firm or any constituent member of the JV.
- f) Normally EMD shall be submitted only in the name of the JV and not in the name of constituent member. However, EMD in the name of lead partner can be accepted subject to submission of specific request letter from lead partner stating the reasons for not submitting the EMD in the name of JV and giving written confirmation from the JV partners to the effect that the EMD submitted by the lead partner may be deemed as EMD submitted by JV firm.
- g) One of the members of the JV firm shall be the lead member of the JV firm who shall have a majority (at least 51%) share of interest in the JV firm. The other members shall have a share of not less than 20% each in case of JV firms with up to three members and not less than 10% each

in case of JV firms with more than three members. In case of JV firm with foreign member(s), the lead member has to be an Indian firm with a minimum share 51%

h) A copy of Letter of Intent or Memorandum of Understanding (MoU) executed by the JV members shall be submitted by the JV firm along with the tender. The complete details of the members of the JV firm, their share and responsibility in the JV firm etc. particularly with reference to financial technical and other obligation shall be furnished in the agreement.

~~**i)** Once the tender is submitted, the agreement shall not be modified/ altered/ terminated during the validity of the tender. In case the tenderer fails to observe/ comply with this stipulation, the full Earnest Money Deposit (EMD) shall be forfeited. In case of successful tenderer, the validity of this agreement shall be extended till the currency of the contract expires.~~

j) Approval for change of constitution of JV firm shall be at the sole discretion of the BMC. The constitution of the JV firm shall not be allowed to be modified after submission of the tender bid by the JV firm except when modification becomes inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. In any case the Lead Member should continue to be the Lead Member of the JV firm. Failure to observe this requirement would render the offer invalid.

k) Similarly, after the contract is awarded, the constitution of JV firm shall not be allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract condition.

l) On award of contract to a JV firm, a single Performance Guarantee shall be required to be submitted by the JV firm as per tender conditions. All the Guarantees like Performance Guarantee, Bank Guarantee for Mobilization advance, machinery Advance etc. shall be accepted only in the name of the JV firm and no splitting of guarantees amongst the members of the JV firm shall be permitted.

m) On issue of LOA, an agreement among the members of the JV firm (to whom the work has been awarded) has to be executed and got registered before the Registrar of the Companies under Companies Act or before the Registrar / Sub-Registrar under the Registration Act, 1908. This agreement shall be submitted by the JV firm to the BMC before signing the contract agreement for the work. (This agreement format should invariably be part of the tender condition). In case the tenderer fails to observe/ comply with this stipulation, the full Earnest Money Deposit (EMD) shall be forfeited and other penal actions due shall be taken against partners of the JV and the JV. This joint venture agreement shall have, inter-alia, following clauses:-

i. Joint and several liability - The members of the JV firm to which the contract is awarded, shall be jointly and severally liable to the Employer (BMC) for execution of the project in

accordance with General and Special conditions of the contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the BMC during the course of execution of the contract or due to no execution of the contract or part there- of.

ii. Duration of the Joint Venture Agreement -It shall be valid during the entire period of the contract including the period of extension if any and the maintenance period after the work is completed.

iii. Governing Laws - The Joint Venture Agreement shall in all respect be governed by and interpreted in accordance with Indian Laws.

i. Authorized Member -Joint Venture members shall authorize one of the members on be- half of the Joint Venture firm to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV firm.

No member of the Joint Venture firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the employer in respect of the said tender/contract.

n. Documents to be enclosed by the JV firm along with the tender:

i. In case one or more of the members of the JV firm is/are partnership firm(s), following documents shall be submitted:

a. Notary certified copy of the Partnership Deed,

b. Consent of all the partners to enter into the Joint Venture Agreement on a stamp paper of appropriate value (in original).

c. Power of Attorney (duly registered as per prevailing law) in favor of one of the partners to sign the MOU and JV Agreement on behalf of the partners and create liability against the firm.

ii. In case one or more members is/are Proprietary Firm or HUF, the following documents shall be enclosed:

a. Affidavit on Stamp Paper of appropriate value declaring that his Concern is a Proprietary Concern and he is sole proprietor of the Concern OR he is in position of "KARTA" of Hindu Undivided Family and he has the authority, power and consent given by other partners to act on behalf of HUF.

iii. In case one or more members is/are limited companies, the following documents shall be submitted:

a. Notary certified copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement, authorizing MD or one of the Directors or Managers of the Company to sign MOU, JV Agreement, such other documents required to be signed on behalf of

the Company and enter into liability against the company and/or do any other act on behalf of the company.

- b. Copy of Memorandum and articles of Association of the Company.
- c. Power of Attorney (duly registered as per prevailing law) by the Company authorizing the person to do/act mentioned in the para (a) above.
- o. All the members of the JV shall certify that they have not been black listed or debarred by BMC from participation in tenders/contract in the past either in their individual capacity or the JV firm or partnership firm in which they were members / partners.
- p. Credentials & Qualifying criteria: Technical and financial eligibility of the JV firm shall be adjudged based on satisfactory fulfillment of the following criteria:

Technical eligibility criteria: In case of Work involving single discipline, the Lead member of the JV firm shall meet at least 35% requirement of technical capacity as stipulated in tender document.

OR

In case of composite works (e.g. works involving more than one distinct component such as Civil Engineering works, M&E works, Electrical works, etc. and in the case of major bridges, substructure and superstructure etc.), at least one member should have satisfactorily completed 35% of the value of any one component of the project work so as to cover all the components of project work or any member having satisfactorily completed 35% of the value of work of each component during last seven financial years.

In such cases, what constitutes a component in a composite work shall be clearly defined as part of the tender condition without any ambiguity.

Financial eligibility criteria: The contractual payments received by the JV firm or the arithmetic sum of contractual payments received by all the members of JV firm in any one of the previous three financial years and shall be at least **100% of the estimated value** of the work as mentioned in the tender.

84. Compensation for delay:

If the Contractor fails to complete the works and clear the site on or before the Contract or extended date(s) / period(s) of completion, he shall, without prejudice to any other right or remedy of Municipal Corporation on account of such breach, pay as agreed compensation, amount calculated as stipulated below (or such smaller amount as may be fixed by the Engineer) on the contract value of the whole work or on the contract value of the time or group of items of work for which separate period of completion are given in the contract and of which completion is delayed for every week that the whole of the work of item or group of items of work concerned remains uncompleted, even though the contract as a whole be completed by the

contract or the extended date of completion. For this purpose the term ‘ Contract Value’ shall be the value of the work at Contract Rates as ordered including the value of all deviations ordered:

- Completion period for projects (originally stipulated or as extended) not exceeding 6 months : **to the extent of maximum 1 percent per week.**
- Completion period for projects (originally stipulated or as extended) exceeding 6 months and not exceeding 2 years: **to the extent of maximum ½ percent per week.**
- Completion period for projects (originally stipulated or as extended) exceeding 2 years : **to the extent of maximum ¼ percent per week.**

When the delay is not a full week or in multiple of a week but involves a fraction of a week the compensation payable for that fraction shall be proportional to the number of days involved.

Provided always that the total amount of compensation for delay to be paid this condition shall not exceed the undernoted percentage of the Contract Value of the item or group of items of work for which a separate period of completion is given.

- i. Completion period (as originally stipulated or as extended) not exceeding 6 months:**10%.**
- ii. Completion period (as originally stipulated or as extended) exceeding 6 months and not exceeding 2 years : **7½ percent.**
- iii. Completion period (as originally stipulated or as extended) exceeding 2years:**5%**

The amount of compensation may be adjusted set off against any sum payable to the contractor under this or any other contract with the Municipal Corporation.

85. Action And Compensation Payable In Case Of Bad Work And Not Done As Per Specifications

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Vigilance Department of the BMC or any organization engaged by the BMC for Quality Assurance and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor’s agent shall be considered to have the same force as if they had been given to the contractor himself.

If it shall appear to the Engineer-in-charge or his authorized subordinates in-charge of the work or to the officer of Vigilance Department, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a

quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 8.e. of the general condition of contract in section 9 of tender document (for Compensation for delay) for this default. In such case the Engineer-in Charge may not accept the item of work at the rates of work at the rates applicable under the contract but may accept such items at reduced rates as the Engineer in charge may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in- Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

If the penalisation amount exceeds maximum limit with respect to Clause 8.e of Standard General Conditions of Contract, then a show cause notice shall necessarily be issued to the contract as to why the contract should not be terminated.

The above clause is summarized to make it easy to understand as follows:

1. The Engineer-in-charge shall issue notice to the contractor for rectifying the defects or redoing of the work if necessary, within specific time to achieve the desired quality and quantity of the work and this should be governed by clause 8.f and 9.b of Standard General Conditions of Contract.
2. If the contractor fails to comply the same, only then, the contractor shall be liable to pay compensation at the same rate as under clause 8.e of the Standard General Condition of Contract (for Compensation for delay) for this default.
3. If the penalization amount exceeds the maximum limit, then the contractor will be liable for being banned/ deregistered from business dealings with BMC and this shall be governed by relative provision in Registration Rules of BMC and Standard General Conditions of Contract.

4. This penalization shall be levied only on account of delay in work, unsound, imperfect or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of quality inferior to that contracted for or otherwise not in accordance with the contract.

86. Contractors remain liable to pay compensation:

In any case in which any of the powers conferred upon the Engineer In-charge by the **relevant clauses** in documents that form a part of contract as exercised or is exercisable in the event of any future case of default by the Contractor, he is declared liable to pay compensation amounting to the whole of his security deposit. The liability of the Contractor for past and future compensation shall remain unaffected.

In the event of the Executive Engineer taking action against these **relevant clauses**, he may, if he so desires, take possession of all or any tools and plant, materials and stores in or upon the work of site thereof or belonging to the Contractor or procured by him and intended to be used for the execution of the work or any part thereof paying or allowing for the same in account at the contract rates, or in the case of contract rates not being applicable at current market rates to be certified by the Executive Engineer, may after giving notice in writing to the Contractor or his staff of the work or other authorized agent require him to remove such tools and plants, materials or stores from the premises within a time to be specified in such notice and in the event of the Contractor failing to comply with any such requisition, the Executive Engineer may remove them at the contractors expense or sell them by auction or private sell on account of the Contractor at his risk in all respects and certificate of the Executive Engineer as to the expense of any such removal and the amount of the proceeds an expense of any such sell be final and conclusive against the Contractor.

87. No Claim to Any Payment or Compensation or Alteration In or Restriction of Work

- i. If at any time after the execution of contract documents, the Engineer shall for any reason whatsoever, desires that the whole or any part of the works specified in the Tender should be suspended for any period or that the whole or part of the work should not be carried out, at all, he shall give to the Contractor a Notice in writing of such desire and upon the receipt of such notice, the Contractor shall forthwith suspend or stop the work wholly or in part as required after having due regard to the appropriate stage at which the work should be stopped or suspended so as not to cause any damage or injury the work already done or endanger the safety thereof, provided that the decision of the Engineer as to the stage at which the work or any part of it could be or could have been safely stopped or

suspended shall be final and conclusive against the contractor.

The Contractor shall have no claim to any payment or compensation whatsoever by reason of or in pursuance of any notice as aforesaid, on account of any suspension, stoppage or curtailment except to the extent specified hereinafter.

- ii. Where the total suspension of Work Order as aforesaid continued for a continuous period exceeding 90 days the contractor shall be at liberty to withdraw from the contractual obligations under the contract so far as it pertains to the unexecuted part of the work by giving 10 days prior notice in writing to the Engineer within 30 days of the expiry of the said period of 90 days, of such intention and requiring the Engineering to record the final measurement of the work already done and to pay final bill. Upon giving such Notice, the Contractor shall be deemed to have been discharged from his obligations to complete the remaining unexecuted work under his contract. On receipt of such notice the Engineer shall proceed to complete the measurement and make such payment as may be finally due to the contractor within a period of 90 days from the receipt of such Notice in respect of the work already done by the contractor. Such payment shall not in any manner prejudice the right of the contractor to any further compensation under the remaining provisions of this clause.

- (e) Where the Engineer required to Contractor to suspend the work for a period in excess of 30 days at any time or 60 days in the aggregate, the Contractor shall be entitled to apply to the Engineer within 30 days of the resumption of the work after such suspension for payment of compensation to the extent of pecuniary loss suffered by him in respect of working machinery remained ideal on the site of on the account of his having to pay the salary of wages and labour engaged by him during the said period of suspension provided always that the contractor shall not be entitled to any claim in respect of any such working machinery, salary or wages for the first 30 days whether consecutive or in the aggregate or such suspension or in respect of any such suspension whatsoever occasion by unsatisfactory work or any other default on his part, the decision of the Engineer in this regard shall be final and conclusive against the contractor.

88. Contractor to supply plant, ladder, scaffolding, etc and is liable for damages arising from non provision of lights, fencing, etc.

The Contractor shall supply at his own cost all material, plant, tools, appliances, implements, ladders, cordage, tackle scaffolding and temporary works requisite or proper for the proper execution of the work, whether, in the original altered or substituted form and whether included in the specification of other documents forming part of the contract or referred to in

these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirements of the Eng-In-Charge as to any matter as to which under these conditions is entitled to be satisfied, or which is entitled to require together with the carriage therefore to and from the work.

The Contractor shall also supply without charge, the requisite number of person with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurements of examination at any time and from time to time of the work or materials, failing which the same may be provided by the Engineer In-charge at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or offers sufficient portion thereof.

The contractor shall provide all necessary fencing and lights required to protect the public from accident and shall also be bound to bear the expenses of defence of every suit, action or other legal proceedings, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit action or proceedings to any such person or which may with the consent of the contractor be paid for compromising any claim by any such person.

89. Prevention of Fire :

The contractor shall not set fire to any standing jungle, trees, brushwood or grass without a written permit from the Engineer In-charge. When such permit is given, and also in all cases when destroying cut or dug up trees brushwood, grass, etc., by fire, the contractor shall take necessary measure to prevent such fire spreading to or otherwise damaging surrounding property. The Contractor shall make his own arrangements for drinking water for the labour employed by him.

90. Compensation for all damages done intentionally or unintentionally by contractor 's labour whether in or beyond the limits of BMC property including any damage caused by spreading the fire shall be estimated by the Engineer In-charge or such other officer as he may appoint and the estimate of the Engineer in-charge to the decision of the Dy. Chief Engineer on appeal shall be final and the contractor shall be bound to pay the amount of the assessed compensation on demand failing which the same will be recovered from the Contractor as damages or deducted by the Engineer In-charge from any sums that may be due or become due from BMC to contractor under this Contract or otherwise. Contractor shall bear the expenses of defending any action or other legal proceedings that may

be brought to prevent the spread of fire and he shall pay any damages and costs that may be awarded by the Court in consequence.

91. In the case of Tender by partners, any change in the constitution of the firm shall be forthwith, notified by the contractor through the Engineer In-charge for his information.

92. Action where no specifications :

In the case of any class of work for which there is no such specifications, such works shall be carried out in accordance with the specifications and in the event of there being no such specifications, then in such case, the work shall be carried out in all respects in accordance with all instructions and requirements of the Engineer In- charge.

93. Safety and medical help :

I. The Contractor shall be responsible for and shall pay the expenses of providing medical help to any workmen who may suffer a bodily injury as a result of an accident. If such expenses are incurred by BMC, the same shall be recoverable from the contractor forthwith and be included without prejudice to any other remedy of BMC from any amount due or that may become due to the Contractor.

II. The contractor shall provide necessary personal safety equipment and first-aid box for the use of persons employed on the site and shall maintain the same in condition suitable for immediate use at any time.

III. The workers shall be required to use the safety equipments so provided by the contractor and the contractor shall take adequate steps to ensure the proper use of equipments by those concerned.

IV. When the work is carried on in proximity to any place where there is risk or drawing all necessary equipments shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.

94. No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or in the case of clearance of works, on account of ant delay in according to sanction of estimates.

95. Anti-malaria and other health measures: Anti-Malaria and other health measures shall be taken as directed by the Executive Health Officer of BMC. Contractor shall see that mosquito-genic conditions are created so as to keep vector population to minimum level. Contractor shall carry out anti-malaria measures in the area as per the guidelines issued by the Executive Health Officer of BMC from time to time. In case of default, in carrying out prescribed anti-malaria measures resulting in increase in malaria incidence, contractor shall be liable to pay BMC on anti- malaria measures to control the situation in addition to fine.

SECTION - 10

**SPECIFICATIONS
& SELECTION OF MATERIAL**

SPECIFICATIONS AND MATERIAL SELECTION

Technical Specifications:

A. Salient features of the 90MLD Water treatment plant:

1. The water treatment plant is designed for 90MLD capacity with maximum flow of 99MLD and hydraulically designed with 20% loading i.e.108MLD. The plant is fully automatic with SCADA controls.
2. Water treatment process involves inlet works, PAC(Poly aluminium chloride) dosing, pre-chlorination before clarifier, Aqua DAF clarification, filtration and post chlorination.
3. Chlorine dosing is carried out from electro chlorination with capacity of 35kg/hr.
4. PAC dosing is monitored from electro chlorination building by means of 2 nos. of PAC saturation tank (25 m³each), 2 nos. of diaphragm pumps.
5. Clarification process is carried out with help of aquaDAF clarifiers of 54MLD capacity each.
6. The filtration process is carried out in two filter streams by 6 nos. of filter beds.
7. Post chlorination is carried out in filtered water chamber directly at the treated water outlet pipeline. Retention time for post chlorination is given in powai low level reservoir of approx. 1/2hrs.
8. The treated water is conveyed to the PLLR (Powai low level reservoir) by means of gravity for onward distribution on to city of Mumbai.
9. This plant is also designed to recycle sludge water from waste water recycle tank and back washes water from filters.

The salient features of recycling plant are as below:

➤ **SRA(Sludge Regulation Area) Plant:**

- a) It is designed to recycle supernatant and centrate water after removal of sludge from the sludge water.
- b) Process involves accumulation and proper mixing of sludge water from 90MLD plant. The sludge water from wash water recirculation tanks & clarifier sludge sump is fed into 1 nos. of densadeg thickener to achieve outlet sludge consistency of around 4%. The thickened sludge is collected in sump and pumped to 3 nos. of centrifuge of capacity 15m³/hr by means of 3 nos. of screw pumps after poly-electrolyte dosing. Sludge handling is done with the help of the conveyor belt and 1 nos. sludge trolley.

➤ **W.W.R.T.**

- a) The backwash water from 6 nos. of filter beds of 90 MLD WTP is collected into WWRT and same is lifted by means of 3 nos. of submersible pumps of 120m³/hr capacity. The recycled water is brought to the inlet chamber of 90 MLD plant. The plant is designed for 3.6 MLD.
10. In addition to above, process related equipments of 90MLD water treatment plant includes:
- i. The inlet chamber including clarifier bypass to treated water outlet line inlet chamber overflow to sand trap.
 - ii. Water quality monitoring and control system including sampling.
 - iii. Instrumentation

- iv. Electrical installation including allied equipments, cabling etc. Switch gears, distribution boards, fire fighting system, P.A system, Cabling, earthing, lighting protection, lighting including street etc. Required within the boundary limits of the plant including provisions for trenches/ducts.
- v. Overflow spent wash water, chemical drainage, site drainage, wash water and sewage disposal system.
- vi. Interconnecting pipelines within and between the structures including underground work.
- vii. Roadwork, general site drainage and site grading.
- viii. Furniture required for supervising, operating and inspection staff of the plant.

B. Input and output water quality

1. Raw water quality:

The plant is able to treat the raw water according to the raw water design value:

- pH.....6.5-8.5

Total suspended solids-

- For clarification.....Less than 4mg/l
- Sludge management system.....50mg/l(In raw water considered for sludge treatment system)

2. Treated water quality:

The treated water quality based on raw water quality shall be:

- Turbidity less than 1.0 NTU
- TSS..... less than 1.0mg/l
- Residual chlorinemore than 1.0mg/l
- Coliform organism(CFU/100ml). Nil

C. Process Guarantees:

The process guarantee is the assurance given to meet the standards and specifications and vouch to operate the plant efficiently. These guarantees are defined in the specifications these guarantees can be achieved when the plant is operated at maximum work flow.

- 1. Water loss as sludge:** The waste water which is recovered from sludge and is not recycled is considered as a water loss. It shall not exceed 2% of the total amount of water filtered during non-monsoon period & monsoon period.
- 2. Water loss from backwash:** The total wash water i.e. pumped backwash and cross wash is also a part of water loss. It shall not exceed 2% of the total amount of water filtered during non-monsoon and monsoon period.

D. Functional Guarantees:

The 90 MLD plant is designed to comply with the final water quality requirements only if the plant has been operated in accordance with the operating procedures explained as following:

Water quality after clarification:

1. For the dry season or non-monsoon season conditions when raw water turbidity is not exceeding to 10 NTU

Parameters	Unit	Concentration
Turbidity	NTU	Less than 5
Suspended solids	mg/l	Less than 5
Total aluminum	mg/l as Al	Less than 0.3

For monsoon condition with turbid water:

Parameters	Unit	Concentration
Turbidity	NTU	Any single value less than 7, maximum with an average value less than 5 over 24 hours.
Suspended solids	mg/l	Less than 5
Total aluminum	mg/l as Al	Less than 0.5 at any time over 24 hours.

Water quality after filtration and chlorination

- The treated water quality after filtration and disinfection based on raw water quality:

Parameters	Unit	Concentration
Turbidity	NTU	Less than 1
Suspended solids	mg/l	Less than 1
Colour	Hazen units	Less than 5
Test and odour	-	unobjectionable
Iron as Fe	mg/l	Less than 0.1
Manganese as Mn	Mg/l	Less than 0.1
Total aluminum	Mg/l as Al	Less than 0.1 (Desirable limit 0.03)
Coliform organisms	CFU/100ml	Absent

Other parameters shall be tested as per the the practice in vogue/ as directed by BMC and shall confirm to BIS 10500.

These guarantees apply for input with the normal works flow of 90MLD, Under rating upto 20% and maximum works flow of 108MLD when all units are under operation and not for the hydraulic overload.

E. Operation & maintenance of the 90MLD water treatment plant:

1. Work of operation & maintenance of 90 MLD water treatment plant of vihar consists of aquaDAF clarifier plant, electro-chlorination plant and PAC dosing system, clarifier sludge water recirculation plant, filter back wash water recirculation plant and SCADA automation system.
2. The successful tender shall take over the plant for operation and maintenance work on as and where basis.
3. During the Operation and Maintenance period, water & power will be provided by BMC at free of cost.

4. Copy of detailed plans, drawings, operation & maintenance manuals will be provided by BMC to successful bidder. The bidder shall copy the same with sufficient quantity for their reference during O&M period.
5. The contractor shall ensure copies of drawings, maps of each of the components of the waterworks along with all relevant manuals are available with the operators. All these sets must be corrected and updated during the maintenance period if any additions / alterations/ deletions are done to any of the equipments.
6. Staff position:
 - List indicating the standard staffing pattern and minimum number of staff for each of the unit of operation and maintenance shall be as per clause G(4) & annexure-I. The staff actually in position with reference to the staffing pattern shall be maintained during the O&M.
 - Any variation as regards to adequacy of staff (inadequate staff) will attract penalty till the contractor rectifies the same as per the Annexure-IV.

a. Operations

1. The Contractor shall carry out regular operations of 90 MLD water treatment plant on a 24X7 basis for the proper functioning of the plant. The operations shall be carried out with the minimum staff as mentioned in the specifications. The operational work involves mechanical, Electrical & instrumentation (Automation, SCADA) etc. works for AquaDAF clarifier plant, filtration plant, sodium hypochlorite(NaOCl) and PAC dosing system, sludge recirculation plant including disposal of dewater sludge to the approved site with necessary loading, unloading, transporting etc. To achieve water quality and allied process requirements as per the specifications.
2. The operation of water treatment plant must be regulated by operations manual in order to fulfil the legal requirements for state of the art operation and the co-operative regulations for labour safety and health. At the same time, staff employed need instructions for extraordinary non-routines situations, routine works, equipments operations etc. These procedures instructions are binding instructions on the execution of define procedures, processes and events.they contain definitions on what has to be done when , where, how, by, whom using which materials and considering which documents and how this shall be controlled and documented. the instructions help the operators and the employees to manage and operate the plant efficiently.
The instructions for the operation of plant in normal condition, monitoring all the process parameters, deviation from the normal operation, waste management, labour safety, execution of dangerous works etc. Described in the manual are briefed as below:
3. Manual Operations:
If required manual operations as below shall be carried out:
 - a. Inlet works:
 - Flow regulation by operating electrically actuated control valve in the upstream of inlet chamber.
 - Overflow management through process drain.
 - b. Flash Mixer:
 - In case of low turbidity in raw water if required AquaDAF shall be by passed by operation of penstock gate.
 - c. Distribution chambered and AquaDAF clarifiers:

- Operations of penstock gate or regulate the flow in each AquaDAF.
 - Operation of compressor from control panel. Changeover of compressors.
- d. Aquazur-V filters
- Operation of valve and back wash from filter consoles
 - Operation of manual drain valve to completely drain filter for maintenance.
 - Change of working compressor on regular interval.
- e. PAC dosing
- Operation of diaphragm pumps from the selector switch near valves.
 - Dose setting from constant head dosing system according to the flow inlet.
- f. Electro-chlorination building
- Booster pump, chiller, brine pump, pre dosing post dosing pump to be operated on LOCAL mode.
 - Setting the dose rate by adjusting stroke.
 - Operating the neutralization system in LOCAL mode.
- g. Waste water recovery tank stage:
- Operation of submersible pump installed for pumping on LOCAL mode.
- h. Clarifiers sludge sump
- Operation of submersible pump in LOCAL mode to transfer sludge from clarifier sludge sump to densadeg thickener.
 - Operation of flocculator in LOCAL mode.
- i. Flocculators
- Operate manual gate valve to control flow.
 - Operations of agitator in LOCAL mode.
- j. Densadeg Sludge thickener
- Operation of scrapper bridge motors in LOCAL mode.
- k. Thickened sludge sump
- Operate sludge sump in LOCAL mode.
 - Operate submersible mixer in LOCAL mode.
- l. Centrifuge
- Operate belt in LOCAL mode.
 - Operation of poly electrolyte dosing pump in LOCAL mode.
- m. Supernatant tank and centrate tank
- Operating submersible pumps for pumping the water to inlet chamber in LOCAL mode.
4. Auto operations:
Operating all mechanical electrical equipments in auto mode through PLC/SCADA/HMI.
- a. Raw water inlet works
- Operation of control valve through PLC to regulate flow with the help of ultrasonic flowmeter.

- Controlling PAC dosing by analysing the flow and turbidity online.
- b. Distribution channel and AquaDAF clarifier
 - Analyzing the flow distribution in each AquaDAF.
 - Regulating the desludging time based on turbidity of raw water.
 - Controlling frequency of opening and duration of opening of sludge extraction gate.
 - Controlling of starting/stopping of compressors and HP pumps and selecting working and standby.
 - Controlling operations of compressors and HP pumps for aeration in AquaDAF clarifier through pressure vessel.
 - c. Aquazer V filters
 - Performing back wash operation in AUTO or SEMI-AUTO mode by choosing head loss mode or timer mode. The backwash sequence and average time of each cycle of operation shall be as per operation manual.
 - Sequencing of filters for back wash based on head loss timer mode.
 - Controlling operations of backwash blowers used for air scouring of filters.
 - Backwash water flow regulation.
 - d. Chemical building
 - PAC dosing regulation.
 - Controlling operations of single diaphragm pump.
 - Operation of electro-chlorination system.
 - Operations of agitator for proper mixing of solutions.
 - Operations of booster pumps and electrolyser cells.
 - e. Wash water recovery tank stage
 - Submersible pump operations controlled by level switches.
 - f. Clarifier Sludge sump
 - Operation of sludge extraction pumps.
 - g. Flocculator
 - Operation of agitator for uniform mixing of polyelectrolyte in the sludge.
 - h. Densadeg sludge thickener
 - Operation of scrapper motors.
 - i. Thickened sludge sump
 - Operation of submersible mixtures.
 - Operation of sludge feed pump.
 - j. Centrifuge
 - Operation of centrifuge feed pump
 - Belt conveyors for sludge handling
 - Operation of poly dosing pump.
 - Operation of service water valves for flushing centrifuges.
 - k. Supernatant and centrate tank

- Operation of the submersible pumps to pump supernatant from the thickener and the centrate from the centrifuges to inlet chamber.
1. Online instruments
 - Ensure measurement of turbidity, pH and residual chlorine through online instruments and the values to be reflected in field as well as in SCADA.
5. Monitoring and control
1. The water treatment plant is subjected to variation in terms of quality and quantity of water. There could be changes because of seasonal variations in water chemistry, varying plant operation conditions, new environmental law as and other factors. Because of this proper monitoring shall be carried out to ensure that the water treatment plant is satisfactorily controlled so that desired results are attained. The proper monitoring of the WTP shall be include efforts-
 - Reduce the risk associated with chemical underfeed and overfeed.
 - Continuing compliance with environment regulations.
 - Improve quality of plant operations.
 - Increase water and energy saving.
 - Improved plant productivity.
 2. Manual monitoring system shall involve plant operators, technicians and chemist taking care of all the important parameters. The chemist conduct chemical tests such as pH, Turbidity, residual chlorine, suspended solids, conductivity, etc. of water. This will keep them updated about the changes in after quality and they shall take necessary steps to meet the guaranteed quality parameters. The operators shall be responsible for controlling the pumps, valves and other processing equipment to convey the water through each process, taking care of all the parameters. The operator shall also read, interpret and adjust the process to make sure plant equipment and processes are working properly.
 3. The plant has automatic monitoring and control system along with manual system. Because of the dynamic nature of water, a higher degree of precision is required in the monitoring and control of water treatment plant for improved reliability and quality. This is only possible through computer based monitoring and control. The operator shall monitor, adjust, start and stop the treatment process from computer only. The operator shall monitor the system through process integrated control terminal i.e. PLC. The process control program is loaded in the PLC and connected to the computer through fibre optics. The digital readouts of all the parameters helps the operator to determine the process efficiency. Visuals and audible alarms and indicators that indicate deviations from normal treatment process can be seen in the system. The automatic control system can quickly respond in case of hydrogen leak which is major emergency situation.
 4. The operator can easily switch to semi-automatic or manual mode in case of any problem in the control system.
 5. Sampling and testing: the sample testing shall be carried out for locations-

- Raw water inlet
- AquaDAF clarifier outlet
- Filter outlet

6. Schedule of daily operations

1. For each of the activity where operator are employed, a detailed scheme and schedule of unit operations should be worked out and a copy of the same shall be available with each operator. This schedule of unit operation may have to be altered to suit changes in quality breakdowns conditions etc.
2. The contractor shall operate the treatment works including all the plant and associated services on a continuous 24 hour basis to treat all the flow conveyed to the works.
3. The contractor shall operate and utilize all the control and monitoring systems provided and of found to be necessary and if approves by the engineer, shall make adjustments within the operating range of the control system and equipment so that the plant operation matches the treatment process requirements.
4. If it is determined that the facility is not capable of meeting the design parameters for any reason, the contractor shall determine the specific cause of failure and take appropriate action.
5. Quality of water
Complete records of bacteriological and chemical analysis of raw water and treated water shall be maintained and reviewed. Charts shall be prepared to display important characteristics of the water and any changes in these characteristics as compared to the standards.
6. A daily muster, operation logbooks/ log sheet of operating records shall be maintained by the successful contractor and shall be made available to BMC on demand. Other than this the contractor shall maintain plant condition and status register, shift duty register, occurrence register, tag register and history sheets. The contractor shall arrange to print and bind the registers for keeping the records.
7. Reporting of consumables: PAC, Sodium hypo-chlorite and Poly electrolyte daily consumption reports shall be submitted as per the maintenance manual.

b. Maintenance requirements:

1. Maintenance of mechanical, electrical & instrumentation(automation, SCADA) etc. equipments and machinery of aquaDAF clarifiers, filtration plant, elctro-chlorination and PAC dosing system, desludging and sludge recirculation's plant, HP pump house, SCADA and automation shall be carried out with minimum manpower and necessary spares/consumable as mentioned in the specifications.
2. The successful contractor shall carry out the routine as well as breakdown maintenance of the 90MLD water treatment plant.
3. Schedule of inspection of machinery:
 1. The contractor shall follow monthly, quarterly, half yearly and yearly maintenance schedules as per the Annexure VII.

2. A regular inspection of machinery, equipment, their lubrication and service program shall be carried out as per O&M manual. Supervisory control should be inspections; lubrications and servicing are being regularly carried out.
4. Maintenance of the plant: the maintenance service provided by the contractor for the period specified in the contract shall ensure the continuous operation of the plant.

The types of maintenance to be provided shall be:

1. Full operational maintenance comprising the planned and regular maintenance carried out by the contractor on a day to day basis, including cleaning, lubricating, minor adjustment, together with preventive and corrective maintenance, fault and break down repairs and replacement of the parts, in accordance with the approved maintenance plan, for the items of plant and equipment within the 90MLD Vihar treatment plant.
 2. Standby maintenance comprising the planned and regular maintenance carried out by the contractor including cleaning, lubricating, periodic operation and minor adjustments of all items of plant and equipment within the treatment works.
 3. The contractor shall carry out the maintenance of the plant installations in accordance with the requirements of the O&M manual and to the approved maintenance plan.
 4. The contractor shall strictly adhere to the manufacturer's recommendations with the equipment maintenance and consumables, the types and grades of lubricants to be used, frequency of lubrication, adjustments to be made regularly.
5. Machinery spares management:
 1. Machinery spares/ material required for maintaining the equipment / machines and as per annexure VI available with BMC and kept in store will be provided by BMC as and when required during maintenance works. The available spares with BMC will be handed over to the successful contractor at the start of O & M contract. Apart from that rates of the spares mentioned in the Annexure III will be for 36 month from starting date of O&M work and separate work order will be issued to the successful contractor for required quantity AS and WHEN required basis after obtaining sanction of the competent authority.

The contractor shall use the required spares throughout the contract period AS and WHEN basis after exhausting the quantity which has been included in the annexure VI. Contractor shall have to replace quantity which has been used from Annexure VI with new one before one month of the ending/terminating of the contract. Inventory records shall indicate stock available, inventory used and stock balance.

However, in exceptional cases, if any major spare is required over and above these spares or if any additional spares required, it will be contractor's responsibility.

6. Consumable spares and auxiliary services
 1. All the consumables for preventive and breakdown maintenance works shall be procured and preserved insufficient stock by the contractor.
 2. The contractor shall keep in stock consumables like oil, grease, cotton waste, dongri cloth, gaskets, gland packing, polish papers, fuses, fuse wire, insulation tapes, petroleum jelly, Teflon tape, relevant wire, nut bolts, shims, toilet cleaner etc. And the same shall be used to attend routine maintenance works. The quality /grade of the consumables shall be as per the specifications of the manufacturer. It will be contractors responsibility to provide and use such consumables during O&M of the plant. contractor shall arrange for all such additional consumables which will necessary for O&M of the plant.
 3. The contractor shall carry out major overhauling works of equipments, if required (as specified by the OEM's).
 4. Reporting of breakdown works: for breakdown maintenance works, the contractor shall report promptly to BMC with route cause analysis for major breakdowns.
7. Building and site maintenance
 1. The contractor shall be responsible for :
 - The full maintenance of building, lighting, electrical, ventilation and air conditioning fire fighting system, plumbing and drainage installations.
 - Building and housekeeping maintenance.
 - Full maintenance of the site water and waste water services, cabling and earthing systems together with the site road lightings.
 - Site maintenance including the upkeepment of landscaped are neat and clean.
 2. The building service and housekeeping maintenance shall be undertaken on all buildings and service installations of 90MLD WTP including SRA plant and WWRT.
 3. Routine housekeeping maintenance shall be carried out in accordance with procedure specified in the operation and maintenance manual.

F. General obligations:

1. The contractor shall operate and maintain the whole plant under this contract for the period specified in the contract terms.
The services shall include but not limited to:
 1. Operation and maintenance of the all units of the new 90MLD water treatment plant from raw water inlet valves to treated water outlet valves.
 2. Operation and maintenance of the entire automation system including system for 90MLD water treatment plant involving PLC based automation system, waste water recycling unit for new plant.
 3. Operation and maintenance of recycling unit for filter backwash water and clarifier under flows of new treatment plant.
 4. Environmental friendly disposal of dewatered sludge cakes.
 5. Operation and maintenance of mechanical, electrical equipment including all the instrument at various installations of the system. Electrical circuits, all types of cables, shall also be regularly maintained.

6. The required system for maintenance shall be computerized through suitable computer program to be used for operation, maintenance and store inventory.
 7. Maintenance of all software, computer and communicate on network.
 8. Maintaining communication system including landline phone and public address system (PAS) are the responsibility of the contractor.
2. Terms of payment: Unless otherwise agreed BMC shall pay to the contractor an amount calculated on monthly basis considering the contact period.
An application for interim payment in respect of O&M shall be submitted by the contractor on successful completion of every month period. These shall be accompanied by relevant supporting documents. Within 30days of receipt of the said application for interim payment, it shall be approve or amended such that in the contract after deduction if any. The payment of the amount due to the contractor under interim payment certificate shall be made within 30days from the date of certification. material mentioned in the Annexure VI shall be verified by the stock verification cell at the end of the contract period. After verification by stock verification cell final bill shall be processed.
 3. Statutory requirements:
 1. It will be contractor's responsibility to fulfill obligations under the following licenses and requirements for renewal of the same. Renewal fees will be borne by the BMC.
 - a) Factory license
 - b) Electrical inspector license
 - c) MPCB(Maharashtra Pollution control board) license
 - d) License from directorate of explosive, if required.
 2. Labour license as per the rule of labour act shall be contractors responsibility.
 4. Safety measures (Insurance/renewal/testing etc.)
 1. O&M staff insurance: The adequate insurance for the O&M staff against workmen's compensation policy as per the labour act shall be responsibility of the contractor. However, BMC will not be responsible for any compensation, what so ever for any damage / injury caused to the staff appointed by the contractor.
 2. As per Factory rules testing and certification of Pressure vessels (Rule MFR 65 of 1963) & lifting tackles (Rule MFR 64 of 1963), EOTC for its fitness shall be in the scope of the contractor.
 3. The fire fighting system / fire extinguishers shall be refilled and maintained according to expiry date shall be the responsibility of the contractor.
 4. Sludge handling trolley is provided for sludge handling.
 5. Electrical protection system / relays testing: The relay system for HT / LT circuit breakers and transformers shall be tested as per requirements.
 6. Annual performance test approvals / certification of electrical equipment from the concern chief electrical inspector, if any modification has been done on the HT supply units shall be responsibility of the contractor.
 7. Health check up of the staff employed shall be done from certified surgeon as per the factory act.
 5. Calibration of measuring instruments:
 1. The contractor shall regularly check and calibrate all the field instruments as per the manufacturer's instructions.

2. The contractor shall keep lab instruments like turbidity meter, PH meter, residual chlorine meter in duly checked and calibrated and shall be used in case of requirement.
6. Escalation: The offer should be valid for the contract period of 3(three) years and may be extended further up to twelve months if required on same terms and conditions and with a price rise of 5% of the prevailing contract cost. The tenderer shall take into consideration all possible escalation like taxes and duties, wages, consumable material cost /spares cost etc. while quoting for the tender and no claim what so ever shall be entertained once the contract is awarded.
7. Penalty: penalties will be levied for the following:
 1. Inadequate staff: Penalty if fails to supply ensured manpower for operational & maintenance duties shall be imposed as per the Annexure IV and shall be deducted from monthly running bill. the penalty will be recovered for officers mentioned at Sr. No. 1 to 4 for their absence more than 15 days in a year.
 2. Treated water quality: In case of contractors to meet water quality as specified in clause B(2), the contractor will be given a notice period of 7 day to bring the treated water quality within the stipulated limits. Failing to comply within the notice period, the BMC will have the right to en- cash contractor's security deposit and retention money and terminate the contract.
 3. Water loss as sludge: The waste water which is recovered from sludge and is not recycled is considered as a water loss. It shall not exceed 2% of the total amount of water filtered during non monsoon period& no-monsoon period provided all units are in service.
Penalty of ¼ percent / week will be applicable if water loss quantity exceeds 2% in monsoon season and for non-monsoon season it will be ½ percent per week. Penalty will be calculated for a day on prorated basis.
These penalty losses will be applicable for losses from 90MLD plant.
 4. Water loss from back wash: the total wash water i.e pumped back wash and cross wash is also part of water loss. It shall not exceed 2% of the total amount of water filtered during non-monsoon and monsoon period provided all units are in service. Penalty of ¼ percent / week will be applicable if water loss quantity exceeds 2% in monsoon season and for non-monsoon season it will be ½ percent per week. Penalty will be calculated for a day on prorated basis.
These penalty losses will be applicable for losses from 90MLD plant.
 5. Penalty for incomplete maintenance schedule:
The contractor shall carry out monthly / quarterly / half yearly / yearly maintenance activities as per schedule given. Any non-compliance will attract penalty as per Annexure IV.
8. Consumables:
 1. Electricity: BMC shall directly pay all the power bills however electrical power consumption report shall be submitted.
 2. Chemicals:

- a. the contractor shall provide following chemicals necessary to operate the plant-
 - Material required for Sodium hypochloride solution such as Grade-I salt
 - PAC(Poly aluminium chloride)
 - Polyelectrolyte
 - b. Handling of all the chemicals as per the norms will be responsibility of successful tenderer. Safe working procedure for chemical loading and unloading shall be followed.
 - c. Hydro-chloric acid (HCL) for electro-chlorination system skid cleaning shall be provided by contractor.
 - d. Quoted cost by the contractor shall be inclusive of all cost towards the O&M raw material, taxes to run, operate and maintain the Vihar WTP at any capacity or as required by the department for which no extra claim is admissible.
9. Miscellaneous and other consumables: the contractor at his own expenses shall provide all the consumables required to operate the plant in good condition.
10. General Maintenance and facilities:
- a. The contractor shall provide tools, tackles and equipments required for operation and maintenance work at his own expense.
 - b. All miscellaneous items, for example, vehicles tools, floor and washroom cleaning material, grass cutting equipment, security and safety equipment shall be provided by the contractor at his own expense.
11. Laboratory Services
- a. The contractor shall perform all tests sampling and analysis as and when requires. All analysis shall be carried out in the laboratory of 90MLD Vihar WTP.
 - b. Without limiting the above obligations the contractor shall perform all tests, sampling and analysis is required, in order to obtained in the following information/ report:
 - i. Daily reports:-
 - The daily totals and hourly variations during the day of – flow of raw water and treated water(m³/h and m³/d)
 - The daily concentrations of water quality parameters as per format-1.
 - The daily account of:-
 - Quality of clarifier sludge produced including % solids
 - Quantity of sludge disposed
 - c. All testing, sampling and analysis shall be performed on site in a professional manner in accordance with the relevant standards.
The contractor shall, without limiting its obligations pursuant to the O&M manual, promptly notify the BMC of any unexpected, variations in the raw water quality & performance standard in any part of facilities operation.
 - d. Format for daily reports and monthly reports have been specified and are annexed as Format –1 and Format –2. However if the contractor have better format than above format then he can submit those formats with prior approval of BMC staff.
12. Dewatered sludge transportation and disposal: the final dewatered sludge will have sludge in the form of sludge cakes.

- a. The Contractor shall be responsible for the transportation and disposal of dewatered sludge to an approved location as advised by the BMC.
- b. The dewatered sludge shall be dumped to an approved location provided by BMC in MMRDA region.
- c. Presently in fair season approx. 40 Ton (9 trolleys) and in monsoon season approx. 80 Tons (22 trolleys) of sludge is generated. However the quantity may vary depending upon quality of raw water to the plant.
- d. Sludge handling:
At present, the dewatered sludge is handled with one nos. of trolleys provided at site. One tractor is required to collect sludge in store area nearby SR plant. Sludge excavator (JCB) and dumpers are required for transporting the sludge to dumping area allocated. The contractor has to arrange / hire tractors, excavator and dumpers etc. with driver in required quantities necessary for sludge handling and transportation to dumping site.
- e. Dewatered sludge storing:
The removed dewatered sludge shall be sufficiently dried before dumping. It takes approximate 15 days to become dry solids from sludge.

G. Manpower

1. The Contractor shall provide experienced managerial, technical, supervisory, administrative, non technical personnel and labour necessary to operate and maintain the plant properly, safely and efficiently on a continuous 24 hours basis for the full term of O & M Period. Work shall be carried out in three shifts of eight hours each.
2. The qualifications and capability of the contractor's personnel shall be appropriate for the task they are assigned to perform. The staff provided shall be competent enough to handle any type of situation like failure of electricity / water supply, breakdown etc. independently and fully trained in the operation of the works before being given responsibility for operating any part of the works.
3. If, in the opinion of the BMC engineer, a member of the contractor's staff is considered to be insufficiently skilled or otherwise inappropriate for the task he is required to perform, the contractor shall replace him with a person with the appropriate skills and experience for the task, to the approval of the BMC engineer.
4. The contractor shall consider minimum staff management structure for the operation and maintenance of the works. This structure shall be expected to include but not necessarily be limited to the following personnel:

Sr. No.	Designation	Minimum qualification	Min. nos. required			Total
			G	S	R	
1	Plant manager	Post Graduate / Graduate Engineer in Mechanical /Environment / with minimum 5 years operation experience with 3 years of operation &Maintenance experience for WTP.	1			1
2	Assistant Manager/Process Engineer	Graduate Engineer in Mech./ Environment / Engineer with total 4 years experience with 2 years operation experience	1			1
3	Junior Engineer(Mech & Electrical)	Graduate Engineer in Mech./Electrical Engineer with minimum 2 years experience with 2 years operation experience.		4		4
4	Junior Engineer(SCADA/Automation)	Graduate Engineer in Instrumentation /Electronics &Telecommunication /Electronics Electrical Engineer with minimum 2 years operation experience		4		4
5	Chemist	B.S.C Chemist with 2 years experience or M.S.C chemist with 1 years Experience	1			1
6	Electrician	Diploma in electrical /ITI certificate withPWD license holders	4			4
7	Operator	Diploma/ITI/12 th		7		7
8	Fitter	Diploma / ITI certificate holder	3			3
9	Document controller cum clerk	B.A /B.Com.	1			1
10	Store keeper	Min. 12 th std	1			1
11	Helpers	7 th pass	3	3		6
12	Security guard	7 th pass		9		9
13	Office boy	7 th pass	1			1
14	Gardner	4 th pass	2			2
15	Sweeper	4 th pass	1			1
Total						46

5. It will be the contractor's responsibility to provide maintenance equipment and repair of the same from OEM/outside agency at his own cost.

6. All staff of the successful tenderer shall be of minimum 18 years and maximum 60 years of age. Age proof shall have to submit by the contractor.
7. All staff of the successful tenderer shall be mentally fit, healthy, hardworking and honest.
8. All shift staff shall be given weekly off by rotation. General staff will have their weekly off on Sunday. Only general shift staff will get public holidays limited to 15 (ten) days in a year including National holidays.
9. The successful contractor shall pay salary and wages to his staff, not less than as applicable as per the minimum wages act along with allowances etc. as applicable.
10. It is the responsibility of the contractor to fulfill all statutory obligations like Provident Fund, Gratuity, Insurance, Medical benefits as per the relevant law and BMC will not be responsible, directly or indirectly in case any claim arise. It is also the responsibility of contractor to fulfill the all statutory requirements applicable as per the factory act.
11. The safety standard as per the factory act to be followed while working in the plant.
12. The successful contractor shall also keep all records of statutory dues paid and payment made to the staff and the same shall be made it available to BMC on demand.
13. The contractor shall submit police verification of their own staff within one month after work order is issued. Also, the successful contractor shall have to submit the list of persons appointed for the work with details such as name, residential address, age, qualification and experience etc. The changes made in the staff shall be informed to BMC in writing with details as stated.
14. Entry pass: The contractor shall submit the list of his employees along with their bio data, photo ID proof, residence proof and shall obtain entry pass to their staff and vehicles well in advance from the Administrative Office of EE(HW)WW/AEOC(TM).
15. Office set up:

The supervisory and administrative staff will have to be provided with neat and clean and adequately furnished office. The provision for office for O&M has been kept in the filter annex building. The supervisory staff shall have to be provided with minimum required office furniture. The office set up shall have the following minimum basic facilities/amenities.

- a. Office space for supervisory staff buildings as proposed above.
- b. Office shall have modern table with locking arrangement and chairs.
- c. Personal computers with printers, stationery for supervisory staff.
- d. Adequate numbers of cupboards to keep, maintain record and important documents.
- e. In all the control rooms, provision for first aid kit shall be made.
- f. Personal safety items such as boots, eye wears, ear pins, gloves, helmets, dust masks, face shields, belt, etc. shall be provided for operating staff as per Factory Act.
- g. Lockers for operating staff to keep their uniforms,, tool shall be provided.
- h. Pantry arrangements with lunch room for staff members will have to be made.
- i. Space shall have to be provided in respective units such as control rooms in clarifiers, filters and recirculation plant for keeping required tools.
- j. Space shall be provided to keep spare tools.
- k. Conference room
- l. The successful tenderer shall provide proper uniform and identity cards to his staff.
- m. Transportation:

As 90 MLD WTP is situated near to Sanjay Gandhi National Park, wild animals are wandering during night hours and it is unsafe for staff, therefore the successful tenderer shall make his own proper arrangement for transportation of their staff for Operation and Maintenance work of 90 MLD water treatment plant in each shift.

- i. The contractor shall maintain one vehicle with driver in three shifts to handle following work load.
 - As an emergency preparedness measure it is necessary to have standby vehicle in each shift as the plant comes under factory and categories as major accidental hazardous unit.
 - For transportation of manpower, tools and tackles for operations/ maintenance of valves/equipment in the plant.
 - Procurement of material from local market.

16. Safety: The contractor shall be responsible for overall safety and security of the Plant during the operation and maintenance period.

The contractors duties with respect to safety shall include the following:

- a. Utilize safety awareness procedures in every element of operation and maintenance.
- b. Give emphasis to site safety including:
 - i. Safe working procedures.
 - ii. Cleanliness and care of new Vihar WTP as a whole.
 - iii. Accident and hazardous conditions reporting
 - iv. Safe practice in water treatment plant
 - v. Adhering to safety policy
 - vi. Follow work permit system
 - vii. Carry out mock drills as per onsite emergency plan.
 - viii. Arrange for safety audit, safety reports, hazop study, as per the statutory requirement as necessary is the contractors responsibility.
 - ix. To operate and maintain 320 kVA DG set with fuel
- c. Hold informal safety discussions at least weekly at various levels throughout the period. Also, the O & M personnel shall take a lead in the formation of a safety committee that will meet quarterly to discuss safety issues and procedures to improve safety.
- d. The Contractor shall notify the engineer immediately if any accident happens on site in which the Contractor is directly responsible/ involved which results in any injury to any person whether directly concerned to the Site or a third party. Such initial notification may be verbal and to be followed by a written comprehensive report within 24 hours of accident or as per provisions of Factory act.
- e. The contractor shall provide notice boards/ display boards at appropriate location detailing precautions to be taken by operation and maintenance personnel in work in conformity to regulation and procedures.
- f. The Contractor shall have to take all safety measures for his staff / labours / materials during the course of the work. For any mishaps, the contractor will be held responsible.
- g. The contractor shall follow all relevant safety procedures and shall comply with the legal requirements as per the provisions of various rules & regulation as well as factory act.

17. Reporting :

- a. Effective communication shall be established to achieve organizational objectives.
- b. Contractor shall prepare reports on daily and monthly basis and submit to the engineer. The daily reports are to be submitted on next day. The monthly reports shall be submitted up to 5th day of the next month.
The reports generally contain information as enclosed formats along with brief write upon specific matters needing attention of concerned agencies.
- c. Overall reporting formats will be approved by engineer and may have to be modified from time to time as required and approved by the engineer. Contractor may have to prepare and submit additional reports on particular matter and incidents as and when required by the engineer.

18. Training to contractors personnel:

- a. The successful tenderer shall be well conversant with the operation of the plant and plant allied equipments. He shall arrange for necessary training from the equipment manufacturer for his staff at his own cost if required.
- b. The operation and maintenance staff shall be trained for carrying out operational duties and maintenance activities of the plant.
The workers and supervisors shall undergo a basic occupational safety and health awareness training program. Training programme shall also be arranged for safety data, MSDS, SOP, First aid and work permit system.
- c. Ensure displaying of Material Safety Data Sheets (MSDS) especially for PAC polyelectrolyte in the plant and arrange awareness training.

H. General terms and condition:

1. Plant handover after completion of O&M contract period:

On satisfactory completion of contract period the Plant in good working condition shall be handed over to BMC. If any equipment is found malfunctioning or not working at the time of taking over the plant, then contractor has to repair it at his own cost and if he fails to do so, BMC will carry out the repair work by other means at the risk and cost of the Contractor. The tenderer shall make immediate arrangement for removal of their belongings after the completion of work.

2. The contractor shall have to satisfactorily complied with all obligations in this specifications till expiring of the contract, failing which the Contract deposit will not be released and the Contractor will have to continue with the Operation and Maintenance of the Plant at his own cost. On obtaining necessary certificate from the BMC engineer that there is no demand with respect to operation and maintenance of the plant the contract deposit will be released.
3. Operation and maintenance shall be carried out as per the O & M manual, safety manual, manufacturer's manual already available for the plant.
4. The information given above and provided elsewhere is given in good faith. However, the contractor is encouraged to visit the site and satisfy himself regarding all aspects of work / site conditions and no claim will be entertained on the plea that the information supplied by the engineer is erroneous or insufficient.
5. The bidder shall visit the site, inspect and get themselves acquainted with installed plant and machinery prior to submitting this bid.
6. The BMC reserves right to allow minor variations / waiver in the work if BMC is convinced of constraints, if any.
7. The successful contractor shall have to make his own arrangements for loading,

unloading, transportation and handling of equipment/material at their risk and cost.

8. The contractor shall extend full cooperation and interaction to the Municipal staff with other agencies at site, if involved.
9. The cost of any damage to Municipal property, injury or death caused during the O&M work or any claim arising out of it shall be the responsibility of the contractor and the cost if any towards the same shall be recovered from the contractor's bill.

Sd/-
S.E.(V.F.P)

Sd/-
SESW

Sd/-
AEOC(TM)

Sd/-
E.E.(H.W.)W.W

BRIHANMUMBAI MUNICIPAL CORPORATION

90MLD VIHAR WATER TREATMENT PLANT GENERAL LAYOUT FOR REFERENCE

Note: General layout is attached separately.

BRIHANMUMBAI MUNICIPAL CORPORATION
FORMAT-1 & II

(Attached separately.)

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-I

ORGANIZATION CHART FOR 90MLD WTP O&M WORK

(Attched separately)

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-II

DUTIES & RESPONSIBILITIES OF STAFF

1. Plant Manager:

He is responsible for Operation and Maintenance activities of the plant in an efficient, safe and economical manner. He is guided by policies and assignments received from the top management, but are carried out with a high degree of independent judgement in accomplishing the work and developing new programs and are held accountable for results.

Responsibilities:

- Plan, organize, assigns, directs & reviews of works of employees engaged in O&M of the plant.
- Oversees operation of the plant to meet all applicable regulatory requirements and in accordance with design criteria. Develops and implements techniques and methods of process control which increase plant efficiency.
- Oversees preparation of reports.
- Oversees emergency & unscheduled work to assure appropriate follow through.

During emergency, the Plant manager plays a very important role like:

- Rush to emergency control room and communicate with shift in-charge.
- Monitor emergency control room activities and cater help in allocating resources and disbursing information.
- Inform to crises management team & BMC official/factory manager occupier.
- Assess emergency after consulting with shift in-charge and direct emergency response team for further action.

2. Assistant Manager/ Process Engineer

He is responsible for ensuring that machinery and equipments and entire plant activities are running smoothly. He is accountable for proactive inspections and any remedial repairs required and monitor & manage equipment operations. Responsibilities include maintenance, troubleshooting and repair of all mechanical, hydraulic and diesel power equipment. Skill level requirements vary from basic troubleshooting & preventive maintenance to component replacement.

Roles & Responsibilities:

- Strategize on maintenance, work instruction and methods.
- Create plant preventive maintenance procedure and plant routine maintenance of plant equipment and machinery.
- Analyse breakdowns, diagnose faults and supervise time critical equipment repairs.
- Organize team to make sure 24 hours cover is available in plant.

3. Junior Engineer(Electrical & Mechanical)

He is responsible for maintenance and repair of electrical and instrumentation equipments and overall control system for the plant.

Roles & Responsibilities:

Develop and oversees maintenance programme encompassing electrical and instrumentation activities:

- Oversees the maintenance of electrical and instrumentation equipment system and control.
- Implement & maintains preventive maintenance and material inventory program.
- Develops, implements, and maintains short and long range plans for both the equipment needs & emergency situations.
- Develop & conducts training to electrical & instrumentation maintenance personnel.
- Ensures that proper safety procedures are followed and that all E&I equipment is in safe working order.

In Emergency situation in the plant, he has to perform following duties:

- On hearing the emergency siren, he must proceed to substation and report to the shift in-charge on phone.
- Ensure availability of emergency power & normal running of emergency electrical installation.
- Ensure that all required personnel have reached to the respective workplace.
- Be present at phone to set up communication with the shift in-charge.

4. Junior Engineer(SCADA /Automation):

Junior Engineer will work in shifts, in operational duties and carry out all operations of plants as per directions given by Plant manager / Plant Engineer / Senior Engineers and allied activities of records in logbooks. They shall record all the parameters / readings in Log Sheet / registers and communicate with their higher ups.

He is responsible for the overall operation of the plant in a particular shift in a safe and efficient manner. The shift in charge is required to work in rotating shifts. He is responsible for making crucial decisions in the event of emergency.

Responsibilities:

- Make regular inspection of the plant & equipments to ensure that it is in proper operation at all times.
- Monitor treatment process and flow throughout the plant.
- Make changes to the plant process as necessary to improve plant performance.
- Prepare reports in the respective shift; prepare work orders for malfunctioning of the equipments.
- Read meters, gauges and keep logs of reading.

In Emergency situation in the plant, Shift in-charge has to perform following duties:

- Proceed to the emergency scene and assess the scale of emergency.
- Inform the plant manager/plant engineer and advise him to activate emergency services.
- Direct all operations within affected area.
- Guide rescue and fire fighting operation.
- Ensure that affected area is searched for casualties & area is evacuated to the appropriate assembly point.
- In absence of emergency main controller, he can direct the shutting down & evacuation of the plant.
- Report all significant developments to the emergency control centre.

All other officials and their staff shall work in co-ordination with respective seniors towards fulfilment of the objectives of operation and maintenance of the plant as a whole.

Note: All the staff shall follow the instructions of the BMC officials as necessary.

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-III

Critical spare parts

The contractor shall keep following critical spares readily available in the plant required for operation and maintenance work. Costs of these tools are deemed to be included in the rates quoted for operation & maintenance jobs and no separate claim will be entertained.

Sr. No.	Equipment Name	Make	Eqpmt Number	Spare Part Description	Unit	Qty.
1	Electrolyser cells	Tianoo	4	Spare Electrolyse cells	Nos	4
2	Filter Release nozzles	Guddi plastcon	33340	Filter Release nozzles	Nos	4500
3	AquaDaf release nozzles	Guddi plastcon	320	Aqua Daf release nozzles	Nos	250
4	3 Phase.Controller card	RUTTONSHA	4	3 Phase.Controller card	Nos	2
5	U/V,O/V, Card No.S001	RUTTONSHA	2	U/V,O/V,Card No.S001	Nos	1
6	mV.Amplifier card no.9902	RUTTONSHA	2	mV.Amplifier card no.9902	Nos	1
7	ACB 1600A, 4P, EDO, 50KA, Microprocessor Based	Schneider Electric	3	ACB 1600A, 4P, EDO, 50KA, Microprocessor Based	Nos	1
8	Capacitor Bank 25KVAR	Schneider Electric	8	Capacitor Bank 25KVAR	Nos	4
9	Capacitor Bank 15KVAR	Schneider Electric	10	Capacitor Bank 15KVAR	Nos	5
10	Capacitor Bank 10KVAR	Schneider Electric	6	Capacitor Bank 10KVAR	Nos	5
11	Capacitor Bank 20KVAR	Schneider Electric	4	Capacitor Bank 20KVAR	Nos	2
12	Power Contactor 700 Amp AC-1 Duty	Schneider Electric	2	Power Contactor 700 Amp AC-1 Duty	Nos	1
13	Capacitor Duty Conductor	Schneider Electric	16	Capacitor Duty Conductor	Nos	3

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-IV

Penalty for absenteeism of staff and for non compliance to the maintenance schedule

A. Penalty to be deducted from bill for absenteeism of contractor's staff

Sr. No.	Staff	Penalty per person/shift/day in rupees
1	Plant manager	2500
2	Assistant Manager/Process Engineer	2000
3	Junior Engineer(M&E)	1800
4	Junior Engineer(SCADA/Automation)	1500
5	Chemist	1500
6	Electrician	1250
7	Operator	1000
9	Fitter	1000
10	Document controller cum clerk	800
11	Store keeper	800
12	Helpers	500
14	Security guard	400
15	Office boy	400
16	Gardner	400
17	Sweeper	400

B. Penalty for non compliance to the maintenance schedule

Sr. No.	Non-compliance % to maintenance schedule (Monthly, Quarterly, half Yearly, Yearly)	Penalty in Rs.
1	Up to 20%	0.25% of the contract cost for that year
2	20% to 30%	0.50% of the contract cost for that year
3	30% and above	1% of the contract cost for that year

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-V

Equipments available in the 90MLD plant for reference

New Item No.	Equipment location and description		Qty.	Unit
	VIHAR WATER TREATMENT PLANT			
	SUPPLY AND DELIVER TO SITE PLANT FOR THE FOLLOWING:			
1	Interconnection with existing Raw water Pipeline to Inlet chamber of the new treatment Plant and electrically/ pneumatically operated. Isolation BFV with dismantling joint on inlet raw water line.			
	1.01	DN 900 Isolation Butterfly Valve with Electrical Actuator and Bypass arrangement	1	Nos
	1.02	DN 900 Flange Adaptor	1	Nos
	1.03	DN 900 Flow meter	1	Nos
	1.04	DN 700 Control Valve with Electrical Actuator	1	Nos
2	New Inlet Works			
	2.01	500 x 500 Manual Penstock for Scum Removal Arrangement	1	Nos
	2.02	Level Switch for Inlet works	1	Nos
	2.03	Ultrasonic Level transmitter	1	Nos
	2.04	Sampling Pump with Motor, accessories, DN 32 rotameter and piping	2	Nos
	2.05	Pressure Gauge on sampling line	1	Nos
	2.06	Turbidity analyser	1	Nos
	2.07	Temperature Analyser	1	Nos
	2.08	pH Analyser	1	Nos
	2.09	Residual Chlorine analyser	1	Nos
	2.10	SS Weir plate for Inlet and Overflow section	1	Nos
	2.11	Piping for Alum/PAC dosage	LS	LS
3	Flow Distribution arrangement including supply of Flash Mixers and necessary piping.			
	3.01	1500 x 1500 penstock for Flash Mixer Isolation with electric actuator	2	Nos
	3.02	Alum dosing pumps with accessories and piping	2	Nos
	3.03	DN 25 flow meter	1	Nos
	3.04	Ultrasonic level transmitter for Alum tanks	2	Nos
	3.05	Pressure transmitter on Alum dosing line	1	Nos
	3.06	DN 32 Rotameter	1	Nos

	3.07	Calibration pot	2	Nos
	3.08	Level switch for Alum tanks	2	Nos
	3.09	Flash mixers with motor	2	Nos
4	Clarifier bypass including Manually operated penstocks.			
	4.01	DN1200 MS pipe pipe work for clarifier bypass	LS	LS
	4.02	1300 x 1300 manual penstock for clarifier bypass	1	Nos
5	Flocculation, Clarifier tank plant including pipe line and Control and materials requires for connection work of phase1 item to existing filter house and for re-connection of phase1 & phase 2 after completion of phase2 items etc. complete.			
	5.01	1500 x1500 manual penstock for clarifier isolation	2	Nos
	5.02	Ultrasonic Level transmitter for Automatic Weir	2	Nos
	5.03	Float level gauge for Clarified Water channel	1	Nos
	5.04	Level switch for Clarified Water channel	1	Nos
	5.05	Ultrasonic Level transmitter for Clarified Water channel	1	Nos
	5.06	DN250 Pipe work for Aquadaf Clarifier from Pressurization Vessel	LS	LS
	5.07	Compressor with electric motor	2	Nos
	5.08	Compressor accessories including receiver, piping	1	Nos
	5.09	High pressure pump with motor	3	Nos
	5.10	Strainer at suction of HP pumps	3	Nos
	5.11	Automatic Strainer	2	Nos
	5.12	DN250 BFV valve	13	Nos
	5.13	DN250 check valve	5	Nos
	5.14	Pressurization vessel, and accessories	2	Nos
6	Clarifier Sludge Removal and control using local manual/ timer control			
	6.01	Automatic weir with electric actuator	4	Nos
	6.02	DN600 Pipe work for sludge from Aquadaf to clarifier sludge sump	LS	LS
	6.03	DN600 flow meter for sludge withdrawal	1	Nos
7	Sludge valves, Remote manual control therefore etc. complete.			
	7.01	Clarifier Sludge Sump Pump with motor	2	Nos
	7.02	DN100 Check valve	2	Nos
	7.03	DN100 Gate valve	2	Nos
	7.04	DN100 pipe work to Densadeg	LS	LS
	7.05	DN200 pipe work to Densadeg	LS	LS

8	Equipment and structure for the sludge handling systems.			
	8.01	Densadeg Thickener Scrapper Mechanism with Motor	1	Nos
	8.02	Lamella Module for Densadeg Thickener	1	Nos
	8.03	DN200 Flow meter for Densadeg feed line	1	Nos
	8.04	DN100 Check valve for Densadeg feed line	1	Nos
	8.05	DN200 Check valve for Densadeg feed line	1	Nos
	8.06	DN100 manual knife gate valve for Densadeg drain	2	Nos
	8.07	DN80 manual knife gate valve for Densadeg drain	1	Nos
	8.08	Screw pump for Densadeg with motor	3	Nos
	8.09	DN80 manual knife gate valve for Screw Pumps	5	Nos
	8.10	DN80 knife gate valve with electric actuator for screw pumps	2	Nos
	8.11	DN80 Check valve for recirculation sludge line	1	Nos
	8.12	Submersible Mixer with motor for Thickened sludge sump with jib crane	1	Nos
	8.13	Polypac for Densadeg, with accessories	1	Nos
	8.14	Dosing pump of Polymer for Densadeg with motor	2	Nos
	8.15	Polydosing pipework	LS	LS
	8.16	DN25 Rotameter for dosing pump for Densadeg polymer	2	Nos
9	Clarifier sampling and analytical measurement instrumentation			
	9.01	Sampling Pump with Motor	2	Nos
	9.02	Piping and accessories	LS	LS
	9.03	Pressure Gauge on sampling line	1	Nos
	9.04	Turbidity analysers	1	Nos
	9.05	pH analysers	1	Nos
	9.06	Chlorine analysers	1	Nos
10	Jib cranes/Lifting Arrangement for clarifier and sludge handling system.			
	10.01	2T hoist with monorail for High pressure pump and compressor	1	Nos
	10.02	3T hoist with monorail for centrifuge building	1	Nos
	10.03	4T hoist with monorail for backwash air blower	1	Nos
11	Clarified water conveyance up to existing filters in phase - I and up to new filters in phase - 2.			
	11.01	Pipework for connection between clarifier of phase 1 and existing filters	LS	LS

12	Clarifier drainage, and dewatering including under drain system.			
	12.01	10 HP Centrifugal Pumps with piping and accessories	2	Nos
	12.02	3 HP Centrifugal Pumps with piping and accessories	2	Nos
13	Rapid gravity filters of twin beds type including filter gallery pipe work, joints, valves and fittings, sampling pumps and pipe work, instrumentation and controls for filtration plant operation.			
	13.01	Stop log for distribution channel	1	Nos
	13.02	Frames for Stop log	2	Nos
	13.03	800 x 800 penstock with actuator for filter inlet	6	Nos
	13.04	600 x 600 penstock with actuator for filter backwash	6	Nos
	13.05	DN500 manual butterfly valve, metal seated, for filtered water outlet	6	Nos
	13.06	DN500 butterfly valve with actuator for filtered water outlet	6	Nos
	13.07	DN500 pipe work for filtered water outlet and backwash water from backwash water header to filter	LS	LS
	13.08	DN300 pipe work for backwash air from backwash air header to filter	LS	LS
	13.09	DN1200 pipe work for filtered water conduit	LS	LS
	13.10	DN200 filter inlet channel drain manual gate valve	2	Nos
	13.11	Dewatering pump for filter	1	Nos
	13.12	Sampling Pump with Motor	2	Nos
	13.13	Turbidity Analyser	1	Nos
	13.14	pH Analyser	1	Nos
	13.15	Chlorine analysers	1	Nos
	13.16	Pressure Gauge on sampling line	1	Set
	13.17	Ultrasonic level transmitter for filter	6	Nos
	13.18	DPT for filter	6	Nos
	13.19	Piezometer for filter	20	Nos
14	Filter media			
	14.01	Filter Media	529	m3
15	Filter under drain system			
	15.01	DN150 gate valve for filter drain	6	Nos
	15.02	Filter Nozzle	31752	Nos

16	Filter valve operating power system including manual wash control consoles and Auxiliary local control desk.			
	16.01	Solenoid Valve System	LS	Nos
	16.02	Filter control consoles	6	Nos
17	Air scour system including blowers			
	17.01	Backwash air blower with acoustic enclosure, air filter, silencer, pressure relief valve, delivery pressure gauge, check valve and motor	2	Nos
	17.02	DN300 Backwash air blower isolation manual butterfly valve	2	Nos
	17.03	DN300 Backwash air blower valve back pressure valve with actuator	1	Nos
	17.04	DN300 butterfly valve with actuator for filter backwash air	6	Nos
	17.05	DN300 backwash air header pipe work	LS	LS
18	Water up wash and surface wash system including delivery pipe work and flow control systems.			
	18.01	OHT tank filling pump with motor	2	Nos
	18.02	DN200 manual butterfly valve	2	Nos
	18.03	DN150 manual butterfly valve	2	Nos
	18.04	DN200 pipe work	LS	LS
	18.05	DN150 pipe work	LS	LS
	18.06	DN150 check valve	2	Nos
	18.07	DN400 Control Valve with Electric Actuator	1	Nos
	18.08	DN500 pipe work from OHT tank to filter gallery	LS	LS
	18.09	DN150 manual gate valve for OHT tank overflow and drain	1	Nos
	18.10	DN500 butterfly valve with actuator for filter backwash water	6	Nos
	18.11	DN500 backwash water header pipe work in filter gallery	LS	LS
	18.12	Pressure indicator on OHT pump delivery line	1	Nos
	18.13	Level switch in OHT tank	1	Nos
	18.14	Level transmitter for OHT tank	1	Nos
	18.15	DN 500 Wash water line flow meter	1	Nos
19	Filter Wash Water, Recirculation Plant, including collection and pumping to inlet water works.			
	19.01	DN800 pipe work from Sand trap to WWRT	LS	LS
	19.02	DN600 flow meter	1	Nos
	19.03	700x700 penstock with electric actuator	2	Nos
	19.04	500x500 penstock with electric actuator	2	Nos
	19.05	Wash water sludge transfer pump with motor	2	Nos
	19.06	DN100 Sludge transfer piping	LS	LS
	19.07	DN300 gate valve with electric actuator	2	Nos

	19.08	DN200 gate valve with electric actuator	2	Nos
	19.09	Wash water recirculation pump with motor	3	Nos
	19.10	Pressure transmitter for sludge transfer pump	1	Nos
	19.11	Pressure transmitter for wash water transfer pump	1	Nos
	19.12	DN250 Wash water transfer piping	LS	LS
	19.13	DN150 Wash water transfer piping	LS	LS
	19.14	DN100 manual gate valve	2	Nos
	19.15	DN100 check valve	2	Nos
	19.16	DN 150 manual gate valve	3	Nos
	19.17	DN150 check valve	3	Nos
	19.18	DN 250 flow meter	1	Nos
20	Clarifier waste water recycling plant and structure from clarifiers including pumping the supernatant water to inlet works, sludge handling treatment units and converting the sludge in cake forms and sludge disposal complete.			
	20.01	Screw pump with motor	3	Nos
	20.02	Centrifuge with motor	3	Nos
	20.03	Centrate piping to inlet	LS	LS
	20.04	DN150 flow meter on centrate/supernatant line	1	Nos
	20.05	DN80 manual knife gate valve	6	Nos
	20.06	DN80 check valve	3	Nos
	20.07	Belt conveyor with motor	1	Nos
	20.08	DN100 centrate pipe work	LS	LS
	20.09	DN150 supernatant pipe work from Densadeg	LS	LS
	20.10	Flocculator for Densadeg	1	Nos
	20.11	Polypac for centrifuge	1	Nos
	20.12	Dosing pump of Polymer for Centrifuge with motor	3	Nos
	20.13	Polydosing pipe work	LS	LS
	20.14	DN25 rotameter for dosing pump for centriuge polymer	3	Nos
21	Ventilation equipment for filter control block building.			
	21.01	Ventilation equipment for filter control block.	LS	Nos
22	Filtered water conduit including joints, specials and fittings including interconnection to Existing Clear water pipeline from existing filter plant to Powai Low Level Reservoir.			
	22.01	DN1200 MS pipe work from filter gallery to Existing pipeline	LS	LS
	22.02	DN1200 Dismantling joint	2	Nos
	22.03	DN1200 Flow meter	1	Nos

23	Number not used.			
24	Electro-chlorination system including Sodium chloride handling system, Brine solution tank and handling system, Chilling plant, mixing chamber, electrolysis unit, sodium hypo chlorite system, acid wash system, associated piping, valves, suction and dosing pumps, ventilation system etc...Complete for design flow.			
	24.01	Strainer for Brine preparation pumps	2	Nos
	24.02	Isolation valves for Brine preparation pumps	4	Nos
	24.03	Check valves for Brine preparation pumps	2	Nos
	24.04	Piping and accessories for electro-chlorination unit	LS	LS
	24.05	Brine preparation pumps	2	Nos
	24.06	Isolation valves for Inlet filters	4	Nos
	24.07	DPT with accessories for Inlet filters	1	Nos
	24.08	Inlet Filters	2	Nos
	24.09	Isolation valve for Softener	6	Nos
	24.1	Auto regeneration Softener with Multiport valve and accessories	2	Nos
	24.11	Isolation valve for Water chiller unit	1	
	24.12	Water Chiller unit	1	Nos
	24.13	Isolation valve for Water supply pumps	4	Nos
	24.14	Check valves for Water supply pumps	2	Nos
	24.15	Water Supply pumps	2	Nos
	24.16	Isolation Valve for Salt saturator	2	Nos
	24.17	Belt conveyor	1	Nos
	24.18	Salt Saturator with accessories	1	Nos
	24.19	Isolation Valve for brine measuring tank	2	Nos
	24.20	Brine measuring tank	1	Nos
	24.21	Calibration pot for concentrated brine metering pumps with accessories	1	Nos
	24.22	Isolation valve for concentrated brine metering pumps	4	Nos
	24.23	Strainer for concentrated brine metering pumps	2	Nos
	24.24	Concentrated brine metering pumps	2	Nos
	24.25	Dampener for concentrated brine metering pumps	1	Nos
	24.26	Pressure relief valve for concentrated brine metering pumps	2	Nos
	24.27	Isolation Valve to Water chiller unit	1	Nos
	24.28	Rotameter with accessories to static mixer	1	Nos
	24.29	Isolation valve to static mixer	2	Nos
	24.3	Static Mixer	1	Nos
	24.31	Electrolyzer unit skid with accessories	2	Nos
	24.32	Degassing tank with accessories	2	Nos
	24.33	Hydrogen dilution blower with accessories	2	Nos

	24.34	Sodium hypochlorite storage tank with accessories	2	Nos
	24.35	Isolation valve for sodium hypochlorite storage tank	4	Nos
	24.36	Calibration pot for sodium hypochlorite metering pump with accessories	1	Nos
	24.37	Isolation valve for sodium hypochlorite metering pump	8	Nos
	24.38	Pressure Relief Valve for sodium hypochlorite metering pump	4	Nos
	24.39	Sodium hypochlorite metering pump	4	Nos
	24.40	Dampener for Sodium hypochlorite metering pump	2	Nos
	24.41	Diffuser for pre and post chlorination	2	Nos
	24.42	Acid preparation cum recirculation tank with accessories	1	Nos
	24.43	Acid recirculation pump	2	Nos
	24.44	HCl / NaOH barrel	1	Nos
25	One nos. minimum 2 ton grid type electric hoist overhead cranes with pendant push button control for lifting and lowering In Electro-Chlorination Plant.		1	Nos
26	Gates at the outlet of Filter water chamber to.1200 mm dia MS pipe line and 2 no. 1200 mm dia butterfly valves on pipe line from Filtered water chamber to existing clear water line.			
	26.1	1300 mm size Penstock Gate at the inlet channel of filter	1	No
	26.2	1200 mm butterfly valve with electric actuator	1	No
	26.3	Trolley Mounted Dewatering pumps	3	Nos
27	Power, Control cable, cable containment System (Including Ladder type Cable Tray, Anchor fastener, insert plate, Tray support, Double compression Gland etc.)		LS	LS
28	Instrumentation System (not covered in above items)			
	28.01	HART Communicator	1	Nos
	28.02	4-20mA Source	1	Nos
	28.03	Multi Meter	1	Nos
	28.04	Continuity tester	1	Nos
	28.05	Instrument calibrator	1	Nos
	28.06	Instrument tool kit including spanner	1	Nos
	28.07	Portable pH meter	1	Nos
	28.08	Portable conductivity meter	1	Nos
	28.09	Portable turbidity meter	1	Nos

	28.10	Dissolve Oxygen Meter	1	Nos
	28.11	Chloroscope	1	Nos
	28.12	Colorimeter	1	Nos
	28.13	Distilled water plant	1	Nos
	28.14	Electric Oven	1	Nos
	28.15	Magnetic Stirrer	1	Nos
	28.16	Electronic weighing machine	1	Nos
	28.17	Jar Test Apparatus	1	Nos
	28.18	Bunsen burner with gas cylinder and connection	1	Nos
	28.19	Auto Clave	1	Nos
	28.20	Microscope	1	Nos
	28.21	Membrane filter assembly	1	Nos
	28.22	Muffle furnace	1	Nos
	28.23	Refrigerators (165 ltrs)	1	Nos
	28.24	Pecometer	1	Nos
	28.25	Water bath	1	Nos
	28.26	Pipette (1ml, 2ml, 5ml, 10ml)	1	Set
	28.27	Reagent bottle	1	Nos
	28.28	Distill water bottle	1	Nos
	28.29	Conical Flask	1	Nos
29	Instrumentation Control Panel & PLC panel for Centralized monitoring.			
	29.01	PLC 01 - Inlet and AquaDAF Clarifiers	1	Nos
	29.02	PLC 02 - Filter and WWRT	1	Nos
	29.03	PLC 03 - Sludge System	1	Nos
	29.04	PLC 04 - Chemical Building	1	Nos
	29.05	PLC 05 - Substation	1	Nos
30	Supply of Hardware, software, cabling, necessary accessories etc. required for SCADA and Telemetry system.		LS	LS
	30.01	Scada station	1	No
	30.02	Operator work station	3	No
	30.03	Engineer Work Station	1	No
	30.04	Historian Work Station	1	No
	30.05	Laptop	1	No
	30.06	A4 colour Laser Printer	8	No
	30.07	A3 colour Printer	1	No
	30.08	LCD Screen	1	No
	30.09	Control Desk	7	No
	30.10	Scada Software	LS	LS
	30.11	V-Sat	LS	LS
	31.01	Providing EPABX system as per Specification and relevant Indian standard/International standard.	LS	LS

	31.02	Providing latest technology compact Public Address (P.A.) equipment as per Specification and relevant Indian standard/International standard.	LS	LS
32		ELECTRICAL SYSTEM Contractor shall do liaison with the utility (MSEDCL) to avail desired power supply on 22kV. (Necessary authorization letter will be issued by the MCBM). Outdoor Insulator, Ring Main Units-2 sets, Earthing switch, Annunciators, HV Instrument Transformers, Digital energy meters, Over current & Earth fault protection, Under voltage protection, Indoor and Outdoor HV heat shrinkable termination kit, Excavation, refilling, concrete trench, pre-cast slab, hot dip galvanized cable tray ,tray supports, Laying underground of 22kV XLPE power cable, 1.1kV heavy duty control cable, interconnectivity with existing earth grid. Concrete foundation for RMU's Indoor room construction, etc	LS	LS
	32.01	Distribution Transformer with accessories (as per IS 11171 & IS 2026)	2	Nos
	32.02	HV Switchgear, control gear, assembly with Digital metering having 0.2 % accuracy (RMU) (as per IS-62271), Indoor HV termination kit as per IS 13753.		
		22KV outdoor type Air Break Switch (ABS)	1	Nos
		22KV HV RMU Panels	1	Nos
	32.03	Power Control Centre	1	Nos
	32.04	Motor Control Centre (MCCs)		
		MCC	5	Nos
		Soft starter panel	2	Nos
		415V Sandwich type LT bus duct	2	Set
	32.05	LDB,PDB,VDB,Local control station, Power Junction Boxes, Power receptacles, Power Sockets, Switches, MCBs, Switchboard, etc		
		LPBS	70	Nos
		Submersible pump JB	8	Nos
		Power distribution board	1	Nos
		Lighting distribution board	10	Nos
		Valve distribution board	4	Nos
		Exhaust fan distribution board	5	Nos
		Welding receptacles	15	Nos
		Feeder pillar for outdoor lighting	1	Nos
	32.06	Capacitor Bank & APFC Panel (As per IS13340,IS 13341).		
		Capacitor bank and APFC panels	2	Nos
	32.07	Battery Backup set.		
		Battery Bank (Inbuilt with RMU at Sr, 32.02)	1	Nos

		Battery Charger set with accessories (Inbuilt with RMU at Sr, 32.02)	2	Nos
	32.08	Earthing System (as per IS 3043)	LS	LS
	32.09	HV & LV Power Cables, Control Cables, HV Termination Kit (As per IS 7098 part-I to V, IS 10810, ASTM D 2863, IS 13753)	LS	LS
	32.10	All control & Instrumentation Cables	LS	LS
	32.11	Cable containment system (i.e. cable trays, Tray supports, Insert plate, Anchor Fasteners, etc..)	LS	LS
	32.12	Indoor & Outdoor Lighting (As per IS-3646, IS 1944)	LS	LS
	32.13	Lightning Protection System (as per IS-2309)	LS	LS
	32.14	Personal Protective Equipments (PPE) (i.e. Insulated Rubber Mats, Safety shoes, Insulated Hand gloves, Ear Muff, Danger Plate, Shock treatment chart, Danger plates Fire Bucket, First Aid Box, etc.) as per IS and International standards where IS is not available	LS	LS
	32.15	Digital Energy Meters.	LS	LS
33		Provision of Fire Hydrant System as per Specification	LS	LS
34		Provision of Portable Fire Extinguishers as per Specification	LS	LS
35		Provision of Hose cabinets with Hoses as per Specification.	LS	LS
36		Allow for any other items not detailed above which the tenderer considers necessary or prudent for the proper operation of the Works Specify:		
	36.01	Service Water pump set	1	Nos
	36.02	Service water piping	LS	LS
	36.03	Isolation Valve for service water network	LS	LS
37		DG Set with accessories as per specifications	1	Nos
38		Split Air conditioner with accessories as per requirement	LS	LS

39	Residual chlorine analyzer, Hydrogen gas detector, Rectifiers power panel, Motor Control Centre, Annunciations system, PLC Panel, Power cables, Control Cable, Instrumentation Cable, Cable tray, cable tray including accessories and other instrumentation etc... for Electro-Chlorination system			
	39.01	Pressure Gauge for Water supply pumps	2	Nos
	39.02	Pressure Gauge for Brine preparation pumps	3	Nos
	39.03	Pressure Switch for Brine preparation pumps	1	Nos
	39.04	Temperature Transmitter on Water supply pumps	1	Nos
	39.05	Level gauge for Salt Saturator	1	Nos
	39.06	Level switch for Salt saturator	1	Nos
	39.07	Level transmitter for sodium hypochlorite storage tank	2	Nos
	39.08	Power Cables	LS	LS
	39.09	Control Cables	LS	LS
	39.10	Instrumentation Cables	LS	LS
	39.11	Cable trays	LS	LS
	39.12	Rectifier unit	2	Nos
	39.13	Hydrogen Gas Detector	1	Nos
	39.14	PLC panel	1	Nos
	39.15	ICP Panel	1	Nos

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-VI

Special spares and tools available with the BMC

A. Mechanical spares:

Equipment Name	Make	Equipment Numbers	Spare Part Description	Unit	Quantity
Aquadaf Drain Pump	KIRLOSKAR	02 nos.	Impeller	Nos	1
			Pump Shaft	Nos	1
			Gland	Nos	1
			Lantern Ring	Nos	1
			Ball Bearing D.E SKF	Nos	1
			Ball Bearing N.D.E SKF	Nos	1
			Bearing Cover D.E	Nos	1
			Bearing Cover N.D.E	Nos	1
			Shaft Sleeve	Nos	1
			Grease cup	Nos	1
			Wearing Plate N.D.E.	Nos	1
			Wearing Plate D.E.	Nos	1
Aquadaf V-channel Drain Pump	KIRLOSKAR	02 nos.	Impeller	Nos	1
			Gland	Nos	1
			Lantern Ring	Nos	1
			Ball Bearing D.E SKF	Nos	1
			Ball Bearing N.D.E SKF	Nos	1
			Shaft Sleeve	Nos	1
			Grease cup	Nos	1
			Wearing Plate N.D.E.	Nos	1
			Weight for Flap Valve	Nos	1
Submersible pump - Clarified Sludge Sump	KSB	02 nos.	Impeller	Nos	1
			Impeller bolt	Nos	1
			Deep groove ball bearing	Nos	1
			Mechanical Seal	Nos	1
			Wear ring	Nos	1

			Bearing sleeve	Nos	1
			Circlip	Nos	1
			O-Ring Set	Nos	1
			Cable gland -set	Nos	1
Submersible pump - Wash Water Recirculation pump	KSB	03 nos.	Impeller	Nos	1
			Impeller hub cap	Nos	1
			Radial ball bearing	Nos	1
			Radial roller bearing	Nos	1
			Bearing bracket	Nos	1
			Mechanical Seal	Nos	1
			Casing Wear ring	Nos	1
			Bearing sleeve	Nos	1
			Circlip	Nos	1
			O-Ring Set		1
			Cable gland -set		1
			Submersible pump - Wash Water Sludge Transfer	KSB	02 nos.
Impeller hub cap	Nos	1			
Radial ball bearing	Nos	1			
Radial roller bearing	Nos	1			
Bearing bracket	Nos	1			
Mechanical Seal	Nos	1			
Casing Wear ring	Nos	1			
Bearing sleeve	Nos	1			
Circlip	Nos	1			
O-Ring Set	Nos	1			
Cable gland -set	Nos	1			
Automatic Strainer	AMIAD	02 nos.			
			Lower Bearing	Nos	1
			Cylinder Seal	Nos	1
			Cylinder	Nos	1
			Brush assembly	Nos	1
			Sealing flange	Nos	1
			Solenoid valve (GEM-SOL)	Nos	1

			3" Exhaust valve (RAM)	Nos	1
			3/4" Ball valve	Nos	1
			3/4" Control filter 0.2mm	Nos	1
			P.D. Switch (Midwest)	Nos	1
			Connector 5/16" x 1/8"	Nos	1
			Drive Unit	Nos	1
			Coupling Unit	Nos	1
Centrifuge	MBE COAL & MINERALS	03 nos	Rubber Vibrancy Insulators	Nos	4
			Pillow- block frame	Nos	1
			Pillow- block frame,	Nos	1
			Taper Pin	Nos	4
			Felt Strips	Nos	3
			V-Belt	Nos	6
			Felt Strips	Nos	1
			Housing for two bearing	Nos	1
			Intermediate ring	Nos	1
			Needle bearing R & A	Nos	1
			Sealing ring	Nos	1
			Intermediate bearing shaft	Nos	1
			Distance tube	Nos	1
			Ring	Nos	1
			Retaining ring	Nos	1
			Ball Bearing for intermidiate shaft	Nos	1
			Rubber Cam Ring	Nos	1
			Ball Bearing	Nos	2
			Shell	Nos	1
			Shield	Nos	1
Sealing ring	Nos	1			
Mitnehmerrollen flight rollers	Nos	10			
Dichtring sealing ring	Nos	2			

			Aubenbolzen outer bolt	Nos	26
			Rollenkafige roller cages	Nos	2
			Antriebswelle drive shaft	Nos	1
			Sealing cover	Nos	1
			Zykinderrol lenlager	Nos	1
			flansch	Nos	1
			Zylinderrollen cylindrical roller	Nos	40
			Cam Plate	Nos	2
			Exzenter Eccentric	Nos	1
			Deep groove ball bearing	Nos	1
			Self aligned roller bearing	Nos	1
Poly Dosing Pump Densadeg+ Pac dosing Pump	NEPTUNE	04 nos	Worm Gear 37 SPM	Nos	1
			Worm 37	Nos	1
			Indicator plate	Nos	1
			Relief valve plug	Nos	1
			Pump body side backup plate	Nos	1
			Pump Head Back Up Plate	Nos	1
			Valve ball	Nos	4
			Valve Balls	Nos	4
			Valve seat o-ring	Nos	4
			Discharge & Suction Cap O-rings	Nos	2
			Shaft retainer assembly	Nos	1
			Piston2"	Nos	1
			Relief Valve Spring 1/3 & 1/2 HP	Nos	1
			Relief ball valve	Nos	1
			Relief Valve plug	Nos	1
			Relief valve adjusting screw	Nos	1
Check valve assembly	Nos	2			

			Teflon Diaphragm	Nos	1
Poly Pump (Centrifuge)	NEPTUNE	03 nos.	Worm gear 144 SPM	Nos	1
			Eccentric	Nos	1
			Eccentric collar	Nos	1
			Gear shaft retainer	Nos	1
			Worm 144 SPM	Nos	1
			Bearing Retainer	Nos	1
			Upper bearing ring cup	Nos	1
			Upper bearing cone	Nos	1
			Lower bearing cup	Nos	1
			Lower bearing cone	Nos	1
			1/2" Pipe Plug	Nos	1
			Motor Coup[ling	Nos	1
			Relief valve spring	Nos	1
			O-ring, Relief Valve cap	Nos	1
			Motor coupling 7/8"	Nos	1
			Control Rod	Nos	1
			Teflon Diaphragm	Nos	1
			Pump head backup plate (N3)	Nos	1
			Suction/Discharge port (N3)	Nos	2
valve seat (N3)	Nos	4			
1-1/8" Dia Ball (N3)	Nos	4			
Poly Preparation Unit (Densadeg)	DOVER INDIA	01 nos.	Gear Box Assembly	Nos	1
Poly Preparation Unit (Centrifuge)	DOVER INDIA	01 nos.	Gear Box Assembly	Nos	1
Pnuematic Actuator DN 500	FESTO	12 nos.	One Spare Actuator	Nos	1
Pnuematic Actuator DN 300	FESTO	07 nos.	One Spare Actuator	Nos	1

2" Ball valve with Electric actuator	DS FLUID CONTROLS	06 nos.	One Spare Ball Valve with Actuator	Nos	1
Sampling pump	GRUNDFOS	04 nos.	Shaft Seal	Nos	1
			Impeller	Nos	1
			Chamber	Nos	1
			O-ring for outer sleeve	Nos	1
			Kit Chamber stack	Nos	1
Submersible Mixer	GRUNDFOS	01 nos.	Shaft Shield	Nos	1
			Gaskets Kit	Nos	1
			Drive end Bearings	Nos	1
Electric Hoist Blower Room	SAFEX ELECTROME CH 5T	01 nos.	Gasket for Motor side	Nos	1
			Nylock Nut	Nos	1
			External Circlip light	Nos	1
			Brake Liner	Pair	1
			Brake coil	Set	2
Electric Hoist Annex Pump House (Electromech)	SAFEX ELECTROME CH 2T	01 nos.	Gasket for Oil seal housing	Nos	1
			External Circlip light	Nos	2
			Contactora (Hoisting)	Nos	1
			Contractora (C,T)	Nos	1
			Brake coil	Nos	1
HP Pump	WILO (Fludyne)	03 nos.	Shaft Sleeve	Nos	1
			Spacer Sleeve	Nos	1
			Neck ring	Nos	1
			O-ring	Nos	1
			Mechanical Seal	Nos	1
			Key Impeller	Nos	1
			Bearing	Nos	1
			Cir-clip	Nos	1
OHT filling pump	WILO (Fludyne)	02 nos.	Neck ring	Nos	1
			Cir-clip	Nos	1
			Bearing	Nos	1
			Key Impeller	Nos	1
			Mechanical Seal	Nos	1

			O-ring	Nos	1
			Spacer Sleeve	Nos	1
			Shaft Sleeve	Nos	1
Scour Air Blower	TMVT	02nos.	Spacer Ring	Nos	1
			'O' rings	Nos	1
			Grease Nipple.	Nos	1
			ENCLO 320 or SERVO System 320 Oil	Ltr	4
			Shell Multipurpose Grease no.3 (Lithium Base)	KG	5
			Pressure Gauge	Nos	1
			Suction Air Filter	Nos	1
			Coupling set (For Direct Drive)	Nos	1
			Distance bush	Nos	4
			Stuffing box gland bush	Nos	1
			Lower gear wheel	Nos	1
			Upper Gear Wheel	Nos	1
			Securing Disc	Nos	2
			Distance ring 'A'	Nos	2
			Pressure ring	Nos	4
			Asbestos packing ring	Nos	4
			Packing ring for stuffing box	Nos	4
			Oil Level Glass	Nos	2
			Splash Disc	Nos	1
			Outer distance bush	Nos	1
			Coupling bolts	Nos	6
			Air vent Screw	Nos	2
			Distance ring 'B'	Nos	2
			Hex bolt for securing disc	Nos	2
Oil Drain plug	Nos	2			

Belt Conveyor	Techno link	01 nos.	Locating Ring- FRB 10/110 FELT STRIP- FS260	Nos	3
			Output coupling (Pin & bush type Flexible Coupling)	Nos	1
Centrifuge Feed Screw Pump/ Sludge transfer pump	ROTO PUMPS	06 nos.	Stuffing box gasket	Nos	3
			Gland Packing	Nos	3
			Gland	Nos	3
			Stub Shaft	Nos	3
			DOWEL PIN	Nos	3
			Pin retainer	Nos	3
			Universal Joint kit	Nos	2
			Hex head bolt	Nos	2
			Stud	Nos	2
			Rotor	Nos	1
			Bonded Stator	Nos	2
a)Inlet Valve Actuator DN 900	ROTORK	01 nos.	Hollow output shaft permits rising stem travel.	Nos	1
			Hammer blow backlash permits motor to gain full speed before unseating tight stem nuts.	Nos	1
			Double reduction with spur gear/worm gear to give wider band of speeds from 4.5 rpm to 192 rpm.	Nos	1
			Hand/auto lever for hand wheel engagement (manual drive). Power driveautomatically restored by motor start unless lever is padlocked to prevent it.	Nos	1
			Thrust base contains & isolates valve stem thrust from main gear case.	Nos	1

			Detachable drive bushing machined to suit valve stem for convenient valve adaption.	Nos	1
Treated Water outlet Valve DN 1200 Actuator (Rotork)	ROTORK	01 nos.	Torque Sensing Linkage, Gear Box Assembly	Nos	1
Air Compressor	ATLAS CAPCO	02 nos.	Filter/Separator 4000 hrs	Nos	1
			Oil Filter	Nos	1
			Air filter Element	Nos	1
			Drain kit WSD	Nos	1
			Solenoid valve	Nos	1
			Safety valve	Nos	1
			Temp Sensor	Nos	1
			Unloaded assembly	Nos	1
Air Compressor with Dryer	ATLAS CAPCO	02 nos.	AR Hose	Nos	1
			Oil Separator	Nos	1
			Filter	Nos	1
			Air Filter	Nos	1
			Solenoid Valve	Nos	1
			Air Unloader	Nos	1
			Safety Valve	Nos	1
			Safety Valve	Nos	1
Inlet Control Valve with Actuator	AUMA	01 nos.	One Spare Actuator	Nos	1
Automatic Weir Gates & Actuator	AUMA	06 nos.	One Spare Actuator	Nos	1
Backwash Control Valve (400 MM)	AUMA	01 nos.	One Spare Actuator	Nos	1
Scrapper Mechanism	SHIVPAD Engineers	01 nos.	Worm gear	Nos	1
			Gear to Drive Chain	Nos	1

			Indicator glass	Nos	1
Flash Mixer	REMI	02 nos.	Ball Bearing	Nos	1
			Taper Roller Bearing	Nos	1
			Ball Bearing	Nos	1
			Ball Bearing	Nos	1
			Ball Bearing	Nos	1
			Taper Roller Bearing	Nos	1
			Taper Roller Bearing	Nos	1
			Taper Roller Bearing	Nos	1
			Taper Roller Bearing	Nos	1
			Oil Seal	Nos	1
			Oil Seal	Nos	1
			Oil Seal	Nos	1
			Taper Roller Bearing	Nos	1
			Flexible Coupling bush bolt	Set	1
Service pump / flushing pump	GRUNDFOS	02 nos.	Shaft Seal	Nos	1
			Impeller	Nos	1
			O-ring for outer sleeve	Nos	1
PAC Unloading pump	Antico	02 nos.	Impeller	Nos	1
			Mechanical Seal	Nos	1
			Oil Seal set	Nos	1
			O Ring set	Nos	1

B. Electrical and instrumentation spares:

Sr. No.	Equipment Type	Spares Description	Qty./Set
1	Electrical Spares (a)	22kVPT Fuses	9
		22kVPT, LT Fuses	12
		Indicating Lamps R/Y/B/W	19
		MFM	2

		TNC Breaker Selector switch	2
		Digital Ammeter	3
		Digital Voltmeter	2
		MPCB Suitable for motor Rating up to 3.75kW	4
		MPCB Suitable for motor 11kW	2
		MPCB Suitable for motor 15kW	2
		MPCB Suitable for motor 55kW	2
		A/M Selector Switch	2
		MCCB 32 amps	3
		MCCB 63 amps	3
		Start pushbuttons	6
		Stop pushbuttons	6
		36W FTL	48
		Starter for FTL	25
		Bulbs for Street lights	9
2	Electrical Spares(b)	CPU Module	2
		Communication Module	4
		Prefab - cable with connector for CPU, Communication cord and i/o rack	12
		Digital Input Card	5
		Digital Output Card	5
		Analog input Card	5
		Analog Output Card	3
		Relay	25
		Networking Modules/Components/Switch	5
		Power Supply Unit for CPU, Communication Card and I/O rack	4
		Hard Disk Drive	6
		Fiber Optic patch cords	6
		Toner for Colour Laser printer	19

		Memory Module	6
		Ethernet Switch	3
3	Instrumentation	pH transmitter	2
		Residual Chlorine Analyser	2
		Turbidity Analyzer	2
		Pressure Transmitter	2
		Level transmitter	4
		Temperature Transmitter	2
		Pressure Switch	2
		Level Switch	3
		RTD	2
		Thermo Well	2
		Piezometer	1
		Pressure Gauge	5
		Level Gauge	2
		Complete Solenoid valve assembly	12
		Air Filter Regulator complete set with Pressure gauge.	2
		Transmitter Manifold	4
4	Control Panel	Push button complete assembly	7
		Selector Switch	10
		Indicating Lamp complete assembly	25
		MCB	8
		Fuse	51
		Terminal Block	101
		24V SMPS	6

C. Electro-Chlorination Spares:

Sr no	Equipment Name	Make	Equipment Numbers	Spare Part Description	Unit	Qty.
1	Acid recirculation pump	ANTICORROSIVE EQUIPMENTS	02 nos.	Impeller	Nos	1
				Shaft with Key	Nos	1
				Shaft Sleeve	Nos	1
				Coupling	Nos	1
				Complete Mechanical Seal	Nos	1
				Casing and Impeller "O" ring	Nos	1
				Ball Bearing set	Nos	4
2	Concentrated brine metering pumps	SHAPOTOOLS	02 nos.	Main Bearing	Nos	2
				Connecting Rod	Nos	3
				Gasket, Oil seals and O- rings	Nos	2
				Cylinders	Nos	2
				Plungers	Nos	2
				Diaphragm	Nos	2
				Brinometer	Nos	1
3	Sodium hypochlorite dosing pump - pre & post (2 each)	SHAPOTOOLS	04 nos.	Main Bearing	Nos	2
				Connecting Rod	Nos	2
				Gasket, Oil seals and O- rings	Nos	2
				Cylinders	Nos	2
				Plungers	Nos	2
				Diaphragm	Nos	2
4	Field instrument spare	WIKA	6 nos.	Pressure Gauge, Bourdon type, 0-10 kg/cm ² range	Nos	1

		CAPCO	4 nos.	Flow Transmitter - Electrolyser	Nos	1
5	Chiller	SUNBEAM	1	Solenoid Valve Coil	Nos	1
				Flow Switch	Nos	1
				Water Solenoid Valve	Nos	1
				Single Phase Preventer	Nos	1
				LED - Red	Nos	1
				LED - Green	Nos	1
6	Rectifier	SIEMENS	02 nos.	DC Voltmeter	Nos	1
				DC Ammeter	Nos	1
				Relay 4C/O with Socket	Nos	6
				Fuse	Nos	3
7	Brine preparation pump	KIRLOSKAR	02 nos.	Mechanical seal	Nos	2
				Impeller	Nos	2
				Shaft with Key	Nos	2
8	Chiller water pump	KIRLOSKAR	02 nos.	Mechanical seal	Nos	2
				Impeller	Nos	2
				Shaft with Key	Nos	2
9	Brine agitator	APEX		Gear box assembly	Nos	0
						1
10	Electrolysers			Spare Electrolyse cells	Nos	2
11	Belt conveyer	CAPCO	01 nos	Drive Gearbox	Nos	1
				Belt	Nos	1

				Bearing	Nos	4
12	Softener	CAPCO	02 nos.	Multi Function Valve	Nos	2
13	Caustic pump	ANTICO	01 nos	Mechanical seal	Nos	3
				Impeller	Nos	4
				Shaft with Key	Nos	5
14	Air Diluted Blower	Kulkarni Tools	01 nos	Impeller	Nos	1
				Bearing -DE6205zz	Nos	2

D. Tools and Tackels:

Sr. No.	Description	Size	UOM	Qty.
1	Ring Spanners (Make Taparia)	6 x 7	Nos	1
2	Ring Spanners (Make Taparia)	8 x 9	Nos	1
3	Ring Spanners (Make Taparia)	10 x 11	Nos	1
4	Ring Spanners (Make Taparia)	12 x 13	Nos	1
5	Ring Spanners (Make Taparia)	14 x 15	Nos	1
6	Ring Spanners (Make Taparia)	16 x 17	Nos	1
7	Ring Spanners (Make Taparia)	18 x 19	Nos	1
8	Ring Spanners (Make Taparia)	20 x 22	Nos	1
9	Ring Spanners (Make Taparia)	21 x 23	Nos	1
10	Ring Spanners (Make Taparia)	24 x 27	Nos	1
11	Ring Spanners (Make Taparia)	25 x 28	Nos	1
12	Ring Spanners (Make Taparia)	30 x 32	Nos	1
13	D Spanner (Make Taparia)	6 x 7	Nos	1
14	D Spanner (Make Taparia)	8 x 9	Nos	1
15	D Spanner (Make Taparia)	10 x 11	Nos	1
16	D Spanner (Make Taparia)	12 x 13	Nos	1
17	D Spanner (Make Taparia)	14 x 15	Nos	1
18	D Spanner (Make Taparia)	16 x 17	Nos	1
19	D Spanner (Make Taparia)	18 x 19	Nos	1
20	D Spanner (Make Taparia)	20 x 22	Nos	1
21	D Spanner (Make Taparia)	21 x 23	Nos	1
22	D Spanner (Make Taparia)	24 x 27	Nos	1
23	D Spanner (Make Taparia)	25 x 28	Nos	1
24	D Spanner (Make Taparia)	30 x 32	Nos	1
25	Ratchet type Box spanner set		Nos	1
26	Triangle File (Make Taparia)		Nos	1

27	Flat File (Make Taparia)		Nos	1
28	Multiply Screw Driver Set (Make Taparia)	8"	Nos	1
29		10"	Nos	1
30		12"	Nos	1
31	Adjustable Spanner (Make Taparia)	6"	Nos	1
32	Internal Circlip Plier (Make Taparia)	6"	Nos	1
33	External Circlip Plier (Make Taparia)	6"	Nos	1
34	Measuring Tape (Make Freemans)	3 Mtr.	Nos	1
35	Measuring Tape (Make Freemans)	5 Mtr.	Nos	1
36	Chisel (Make Taparia)	6"	Nos	1
37	Centre Punch (Make Taparia)	4"	Nos	1
38	Pipe Wrench (Make Taparia)	12"	Nos	1
39	Pipe Wrench (Make Taparia)	10"	Nos	1
40	INVERTER BASE WELDING MACHINE Single Phase (Make jet Arc)	Single phase 200AMP	Nos	1
41	GREASE GUN		Nos	1
42	CUTTING MACHINE (Make Bosch)	14"	Nos	1
43	Die Set (Make Taparia or Equivalent ISI)	1/2" - 2"	Nos	1
44	Drill Machine (Big),(Make Bosch)		Nos	1
45	Spirit Level (Make Freemans)		Nos	1
46	Magnetic Spirit level(Make freemans)		Nos	1
47	Bearing Puller (ISI)	8"	Nos	1
48	Bearing Puller (ISI)	12"	Nos	1
49	Bearing Puller (ISI)	14"	Nos	1
50	Pipe Vice (ISI)		Nos	1
51	Welding Torch with Complete Box (Make ASHA NM)		Nos	1
52	Allen key, (Make Taparia)	1.5mm - 10mm	Nos	1
53	SAFTY GLOVES 22K.V.KRYSTAL Make		Nos	1
54	SAFTY GLOVES 3.3K.V.KRYSTAL Make		Nos	1
55	TONG TESTER "MECO" MODEL 2250Hz,1000AMPS		Nos	1
56	MULTIMETER "MECO" MODEL 630, 0- 1000V		Nos	1
57	EARTH TESTER + KIT "WACO", 0- 10 Ohm		Nos	1
58	MEGGER LT "MECO" Model DTT995,1000V		Nos	1
59	Half Round File(Make Taparia)		Nos	1
60	Round File (Make Taparia)		Nos	1
61	Wooden File (make Taparia)		Nos	1
62	Hammer (Make Taparia)	1 kg	Nos	1
63	Hammer (Make Taparia)	1/2 kg	Nos	1

64	Teflon Hammer (Make Taparia)		Nos	1
65	Adjustable Spanner (Make Taparia)	12"	Nos	1
66	Monkey Plier (Make Taparia)		Nos	1
67	Cutting Plier (Make Taparia)	8"	Nos	1
68	Internal Circlip Plier (Make Taparia)	8"	Nos	1
69	External Circlip Plier (Make Taparia)	8"	Nos	1
70	Grinding Machine (Make Dewalt)	4"	Nos	1
71	Combination Plier(Make Taparia)	8"	Nos	1
72	Nose Plier long (Make Taparia)	6"	Nos	1
73	Cutting Wheel (Make Bosch)	4"	Nos	10
74	Drill Bit Concrete (Make Bosch)	6mm x 160mm	Nos	1
75	Allen key, (Make Taparia)	12mm - 24mm	Nos	1
76	Unique Make 10" Bench Vice (ISI)		Nos	1
77	Crimping Tool		Nos	1
78	Spirit Level 0.02 accuracy, "SSK"(Imported)		Nos	1
79	DIAL Gauge with Stand MITUTOYA		Nos	1
80	"HTC" Make Noise Level Meter,30dB-130dB		Nos	1
81	Temperature Meter Up to 300 degree "EMBEE"		Nos	1
82	Phase Sequence Meter (Low Voltage)"ACCURATE"		Nos	1
83	Discharge Rod 22KV "BIMCO" Make		Nos	1
84	MEGGER LT"NIPPON" MODEL 5000V		Nos	1
85	"MECO" Make Lux Meter,50000LUX		Nos	1
86	Nitrogen Regulator		Nos	1
87	Grinding Machine (Make Bosch)	7"	Nos	1
88	Drill Bit Concrete (Make Bosch)	8mm x 160mm	Nos	1
89	Drill Bit Concrete (Make Bosch)	10mm x 160mm	Nos	1
90	Drill Bit Concrete (Make Bosch)	12mm x 160mm	Nos	1
91	Drill Bit Concrete (Make Bosch)	16 mm x 100mm	Nos	1

BRIHANMUMBAI MUNICIPAL CORPORATION

Annexure-VII

Maintenance schedule

(attached separately)

SECTION-11

**FRAUD AND CORRUPT
PRACTICES**

FRAUD AND CORRUPT PRACTICES

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

- Without prejudice to the rights of the Authority under relevant Clause hereinabove, if an Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, such Applicant shall not be eligible to participate in any tender or RFQ issued by the Authority during a period of 2 (two) years from the date such Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.

- For the purposes of this Clause , the following terms shall have the meaning hereinafter respectively assigned to them:

A. “corrupt practice” means

the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or save and except as permitted under the relevant sub clause, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Concession

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

C. “coercive practice” means impairing or harming or threatening to impair or harm,

directly or indirectly, any person or property to influence any persons participation or action in the Bidding Process;

D. “undesirable practice” means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and

E. “Restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

F. If the Employer/Financier determines that the Contractor has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days’ notice to the Contractor, terminate the Contractor’s employment under the Contract and expel him from the Site, and the provisions of relevant Clause shall apply as if such expulsion had been made.

G. Should any employee of the Contractor be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with relevant Clause.

For the purposes of this Sub-Clause:

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

vii. acts intended to materially impede the exercise of the Financer's inspection and audit rights provided .

viii. "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

ix. "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, noncompetitive levels.

x. a "party" refers to a participant in the procurement process or contract execution

SECTION-12

PRE BID MEETING

PRE BID MEETING

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

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

12.1. Interpretation of e-Tender Document:

- Tenderer(s) shall examine the tender document and acquaint themselves to all conditions and matters affecting the cost of the works. If any tenderer(s) finds discrepancies or omissions in the Document or if in doubt about their meaning, he should address a query during pre-bid meeting.
- Any resulting interpretation of the tender document will be issued to tenderer(s) as an addendum. Verbal clarification obtained from any source shall not be binding on the Corporation.
- No tenderer(s) shall amend the text of any document except as may be necessary to comply with any addendum.

12.2. Clarification of e-Tendering Documents

- Pre-bid meeting (If proposed as per e-Tender notice) Date:-02/08/ 2022 Time:- 15:00:00
- The tenderer or his authorized representative is allowed to attend a pre-bid meeting as per the date, time and venue mentioned in the tender notice/header data.
- The purpose of the pre-bid meeting will be to clarify issues and to answer questions on any matter that may be raised prior to the pre-bid meeting.
- Any tenderer requiring any clarification of the tender document and/or the works may submit his questions/queries on e-mail of eehwwwes.he@mcgm.gov.in or ae01dyhemaint.he@mcgm.gov.in by 31.07.2022 till 5.00PM.

SECTION –13

LIST OF APPROVED BANKS

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 Banker's guarantee from 1997-98 onwards until further instructions.

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

List of approved Banks:-

A	S.B.I and its subsidiary Banks	B	Nationalized Banks
1	State Bank Of India.	19	Punjab & Sindh Bank.
2	State Bank Of Bikaner & Jaipur.	20	Syndicate Bank.
3	State Bank Of Hyderabad.	21	Union Bank Of India.
4	State Bank Of Mysore.	22	United Bank Of India.
5	State Bank Of Patiyala.	23	UCO Bank.
6	State Bank Of Saurashtra.	24	Vijaya Bank.
7	State Bank Of Travankore	24A	Corporation Bank merged with Union Bank of India
B	Nationalized Banks	C	Scheduled Commercial Banks
8	Allahabad Bank merged with Indian bank	25	Bank Of Madura Ltd.
9	Andhra Bank merged with Union Bank of India	26	Bank Of Rajasthan Ltd.
10	Bank Of Baroda.	27	Banaras State Bank Ltd.
11	Bank Of India.	28	Bharat Overseas Bank Ltd
12	Bank Of Maharashtra.	29	Catholic Syrian Bank Ltd.
13	Central Bank Of India.	30	City Union Bank Ltd.
14	Dena Bank.	31	Development Credit Bank.
15	Indian Bank.	32	Dhanalakshmi Bank Ltd
16	Indian Overseas Bank.	33	Federal Bank Ltd.
17	Oriental Bank Of Commerce.	34	Indsind Bank Ltd.
18	Punjab National Bank.	35	I.C.I.C.I Banking Corporation Ltd.
C	Scheduled Commercial Banks	D	Schedule Urban Co-op Banks

36	Global Trust Bank Ltd.	61	Sangli Urban Co-op Bank Ltd.
37	Jammu & Kashmir Bank Ltd.	62	Saraswat Co-op Bank Ltd.
38	Karnataka Bank Ltd.	63	ShamraoVithal Co-op Bank Ltd.
39	KarurVysya Bank Ltd.	64	Mahanagar Co-op Bank Ltd.
45	S.B.I Corporation &Int Bank Ltd.	65	Citizen Bank Ltd.
46	Tamilnadu Mercantile Bank Ltd.	66	Yes Bank Ltd.
47	United Western Bank Ltd.	E	Foreign Banks
48	Vysya Bank Ltd.	67	ABM AMRO (N.Y.) Bank.
D	Schedule Urban Co-op Banks	68	American Express Bank Ltd.
49	Abhyudaya Co-op Bank Ltd.	69	ANZ Grindlays Bank Ltd.
50	Bassein Catholic Co-op Bank Ltd.	70	Bank Of America N.T. & S.A.
51	Bharat Co-op Bank Ltd.	71	Bank Of Tokyo Ltd.
52	Rupee Co-op Bank Ltd.	72	Bankindosuez.
53	Cosmos Co-op Bank Ltd.	73	BanqueNationale de Paris.
54	Greater Mumbai Co-op Bank Ltd.	74	Barclays bank.
55	JanataSahakari Bank Ltd.	75	City Bank N.A.
56	New India Co-op Bank Ltd	76	Mitsui Taiyokbe Bank Ltd.
57	Maharashtra State Co-op Bank Ltd.	77	Standard Chartered Bank.
58	Bombay Mercantile Co-op Bank Ltd.	78	Cho Hung Bank.
59	North Canara G.S.B. Co-op Bank Ltd.	79	Hongkong & Shanghai banking Corporation.
60	Mumbai District Central Co-op Bank Ltd.		

Note: This list is informative in nature and may subject to variation or updation.

SECTION –14

APPENDIX

FORM OF TENDER

To,
The Municipal Commissioner for Greater Mumbai
Sir,

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

- i. Notice inviting tender.
- ii. Directions to tenderers (General and special)
- iii. General condition of contract for Civil Works of the Brihanmumbai municipal corporation as amended up to date.
- iv. Relevant drawings
- v. Specifications.
- vi. Special directions
- vii. Annexure A and B.
- viii. Bill of Quantities and Rates.
- 1A. I/We_.....

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

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

1B. I/We do here by state and declare that I/We, whose names are given herein below in details with the addresses, have not filled in this tender under any other name or under the name of any other establishment /firm or otherwise, nor are we in any way related or concerned with the establishment /firm or any other person, who have filled in the tender for the aforesaid work.”

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

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

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

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

4. I/We hereby request you not to enter into a contract with any other person/s for the execution of the works until notice of non/acceptance of this tender has first been communicated to me/us, and in consideration of yours agreeing to refrain from so doing I/we agree not to withdraw the offer constituted by this tender before the date of communication to me/us of such notice of non/acceptance, which date shall be not later than ten days from the date of the decision of the Standing Committee or Education Committee of the Corporation, as maybe required under the Mumbai Municipal Corporation Act, not to accept this tender.(Subject to condition 5 below).
5. I/We also agree to keep this tender open for acceptance for a period of 180 days from the date fixed for opening the same and not to make any modifications in its terms and conditions which are not acceptable to the Corporation.
- 6 I/We agree that the Corporation shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely, if.
 - a. I/We fail to keep the tender open as aforesaid.
 - b. I/We fail to execute the formal contract or make the contract deposit when called upon to do so.
 - c. I/we do not commence the work on or before the date specified by the Engineer in his work order.
7. I/We hereby further agree to pay all the charges of whatsoever nature in connection with the preparation, stamping and execution of the said contract.
8. ~~I/We further agree that, I/we shall register ourselves as ‘Employer’ with the Bombay Iron and Steel Labour Board’ and fulfill all the obligatory provisions of Maharashtra Mathadi, Hamal and other Manual workers (Regulation of Employment and Welfare) Act 1969 and the Bombay Iron and Steel unprotected workers Scheme 1970.~~
9. “I/We..... have failed in the accompanying tender with full knowledge of liabilities and, therefore, we will not raise any objection or dispute in any manner relating to any action, including forfeiture of deposit and blacklisting, for giving any information, which is found to be incorrect and against the instructions and directions given in this tender.
10. “I/We further agree and undertake that in the event it is revealed subsequently after the allotment of work/contract to me/us, that any information given by me/us in this tender is false or incorrect, I/We shall compensate the Brihanmumbai municipal corporation for any such losses or inconvenience caused to the Corporation in any manner and will not resist any claim for such compensation on any ground whatsoever. I/we agree and undertake that I/we shall not claim in such case any amount by way of damages or compensation for cancellation of the

contract given to me/us or any work assigned to me/us or is with- drawn by the Corporation,”

Address

Yours faithfully,

.....

.....

Digital Signature of the Tenderer or the Firm

1.....

2.....

3.....

4.....

5.....

Full Name and private residential address

of all the partners constituting the Firm

A/c No.

.....

1.

Name of Bank

2

.....

3

Name of Branch

4.

.....

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 contractor of the one part and
Shri.

the Dy. Municipal Commissioner (S.E) (hereinafter called “the commissioner” in which expression are included unless the inclusion is inconsistent with the context, or meaning thereof, his successor or successors for the time being holding the office of Dy. Municipal Commissioner (S.E) of the second part and the Brihanmumbai municipal corporation (hereinafter called “the Corporation”) of the third part, WHEREAS the contractor has tendered for the construction, 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 them in 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 agreement viz.
 - 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 BMC
- 3) In consideration of the payments to be made by the Commissioner to the contractor as hereinafter mentioned the contractor hereby covenants with the Commissioner to construct, complete and maintain the works in conformity in all respects with the provision of the

contract.

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

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

Signed, Sealed and delivered by the contractors

In the presence of

Trading under the name and style of

Full Name &

Address

Contractors

Signed by the DMC(SE) in the presence of

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

1.

1.

2.

2.

And in the presence of the Municipal Secretary

Municipal Secretary

ANNEXURE " A "

Name of work :

1. The Engineer for this work:

Chief Engineer (_____)

Dy.Ch.Eng.(_____)

Exe.Eng.(_____)

2. Estimated cost of Tender:

Sr. No.	Description of work	Total Amount Rs.
1.	Horticulture works	
2.	Electrical Works	
4.	Total Amount	

3. Earnest Money (1% of the Estimated cost) Rs. _____

4. Time Period

1. Contract as a whole Period completion	
2. Part or Groups of items	
i.	i.
ii.	ii.
iii.	iii.

9. Percentage to be charged as supervision charges for the work got executed through other meanspercent.

The "Actual cost of the work" shall mean in the case of percentage rate contracts the actual cost of the work executed at the rates as mentioned in the Contract Schedule adjusted by the Contractor's percentage rate and cost of extra and excess, but excluding the cost on account of

Water Charges and Sewerage Charges if any, payable by the contractor and also excluding cost on account of price variation claims as provided in price variation clause as amended up to date.

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

1. In case of lump sum contract the cost of the work actually carried out as per break up and programme of the work and the schedule of payment included in the contract including cost of any excess and/or extra items, of the work, excluding the cost on account of water charges and sewerage charges and also excluding cost on account of price variation claims as provided in extra excess conditions as amended up to date.

Annexure- B

PRE-CONTRACT INTEGRITY PACT

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

1. The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.
2. The Bidder further undertakes that he has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other Contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other Contract with the Government.
3. The Bidder will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
4. The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
5. The Bidder, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BMC or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
6. The Bidder shall not use improperly, for purposes of competition or personal gain, or pass 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 dequate care lest any such information is divulged.
7. The Bidder commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

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

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

For the purposes of this Clause 9, the following terms shall have the meaning herein after respectively assigned to them.

1. “fraudulent practice” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process
2. “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;
3. “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
4. “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.

Annexure- C

(On Rs. 500/- Stamp Paper)

DECLARATION CUM INDEMNITY BOND

I, _____ of _____, do hereby declared and undertake as under.

1. I declare that I have submitted certificates as required to Executive engineer (Monitoring) at the time of registration of my firm/company _____ and there is no change in the contents of the certificates that are submitted at the time of registration.

2. I declare that I _____ in capacity as Manager/Director/Partners/Proprietors of _____ has not been charged with any prohibitory and /or penal action such as banning (for specific time or permanent)/de-registration or any other action under the law by any Government and/or Semi Government and/or Government undertaking.

3. I declare that I have perused and examined the tender document including addendum, condition of contract, specifications, drawings, bill of quantity etc. forming part of tender and accordingly, I submit my offer to execute the work as per tender documents at the rates quoted by me in capacity as _____ of _____.

4. I further declare that if I am allotted the work and I failed to carry out the allotted work in accordance with the terms and conditions and within the time prescribed and specified, BMC is entitled to carry out the work allotted to me by any other means at my risk and cost, at any stage of the contract.

5. I also declare that I will not claim any charge/damages/compensation for non availability of site for the contract work at any time.

6. I declare that I will positively make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge

Signature of Tenderer/Bidder

BANKERS GURANTEE IN LIEU OF CONTRACT DEPOSIT

THIS INDENTURE made this _____ day of _____ BETWEEN
THE _____ BANK incorporated under the English/Indian Companies Acts and carrying
on business in Mumbai (hereinafter referred to as 'the bank' which expression shall be deemed to include
its successors and assigns)of the first part _____ inhabitants carrying on
business at _____ in Mumbai under the style and name of Messer's
_____ (hereinafter referred to as 'the consultant') of the second part Shri.
_____ THE MUNICIPAL COMMISSIONER FOR GREATER MUMBAI
(hereinafter referred to as 'the commissioner' which expression shall be deemed, also to include his
successor or successors for the time being in the said office of Municipal Commissioner) of the third part
and THE BRIHANMUMBAI MUNICIPAL CORPORATION (hereinafter referred to as 'the Corporation')
of the fourth part WHEREAS the consultants have submitted to the Commissioner tender for the execution
of the work of " _____ and the terms of such tender
/contract require that the consultants shall deposit with the Commissioner as/contract deposit/ earnest
money and /or the security a sum of Rs. _____ (Rupees _____) AND WHEREAS
if and when any such tender is accepted by the Commissioner, the contract to be entered into in
furtherance thereof by the consultants will provide that such deposit shall remain with and be appropriated
by the Commissioner towards the Security -deposit to be taken under the contract and be redeemable by
the consultants, if they shall duly and faithfully carry out the terms and provisions of such contract and
shall duly satisfy all claims properly chargeable against them there under AND WHEREAS the
consultants are constituents of the Bank and in order to facilitate the keeping of the accounts of the
consultants, the Bank with the consent and concurrence of the consultants has requested the Commissioner
to accept the undertaking of the Bank hereinafter contained, in place of the contractors depositing with the
Commissioner the said sum as earnest money and /or security as aforesaid AND WHEREAS accordingly
the Commissioner has agreed to accept such undertaking NOW THIS AGRREMENT WITNESSES that
in consideration of the premises, the Bank at the request of the consultants (hereby testified)
UNDERTAKES WITH the commissioner to pay to the commissioner upon demand in writing , whenever
required by him , from time to time , so to do ,a sum not exceeding in the whole
Rs. _____ (Rupees _____) under the terms of the said tender and /or the
contract .The B.G. Is valid up to _____”Notwithstanding anything what has been stated
above, our liability under the above guarantee is restricted to Rs. _____ only and guarantee
shall remain in force up to _____ unless the demand or claim under this guarantee is made on us
in writing on or before _____ all your right under the above guarantee shall be forfeited and we shall
be released from all liabilities under the guarantee thereafter”

IN WITNESS WHEREOF

WITNESS(1) _____

Name and _____

address _____

WITNESS(2) _____

Name and _____

the duly constituted Attorney Manager

address _____

the Bank and the said Messer's _____

(Name of the Bank)

WITNESS(1) _____

Name and _____

address _____

WITNESS(2) _____

Name and _____

For Messer's _____

address _____

have here into set their respective hands the day and year first above written.

The amount shall be inserted by the Guarantor, representing the Contract Deposit in Indian Rupees.

Annexure- D

Rate Analysis

Item Description

Sr. no.	Description of rate analysis parameters	Unit	Quantity	Rate	Amount
1.	Basic Material (Rate should be inclusive of all taxes)				
2.	Machinery Hire Charges				
3.	Labour Type		(labour components)		
4.	Total of all components				
5.	Overhead & Profit 15% on 4				
6.	Total Rate (4+5)				
7.	Per unit rate				

Sign & Seal of the Tenderer

PROFORMAS:**PROFORMA- I**

The list of similar works as stated in para 'A' of Post qualification during last seven years–

PROFORMA- I					
Sr.No.	Name of the Project	Name of the employer	Stipulated date of completion	Actual date of completion	Actual Cost of work done
1	2	3	4	5	6

NOTE:

j. Scanned Attested copies of completion/performance certificates from the Engineer-in-Charge for each work should be annexed in the support of information furnished in the above proforma.

k. Works shall be grouped financial year-wise.

PROFORMA- II

Yearly turnover of Civil Engineering Construction Works during the last five years.

PROFORMA- II					
Sr.No.	Financial year	Annual Turnover of Civil Engineering Works	Updated value to current year	Average of last 5years	Page No.
1					
2					
3					
4					
5					
Total					

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

PROFORMA- III

At least similar work, as stated in para 'A' of Post qualification

PROFORMA- III						
Name of the Project	Name of the Employer	Cost of the Project	Date of issue of work Order Stipulated date of completion	Stipulated date of completion	Actual Cost of work done	Remarks explaining reasons for delay, if any
1	2	3	4	5	6	7

Note: Scanned Attested copies of completion/performance certificates from the Engineer-in-charge for each work should be annexed in support of information furnished in the above proforma.

PERSONNEL:

PROFORMA- IV					
Sr. no.	Post	Name (Prime Candidate / Alternate)	Qualification	Work Experience	
				No. of Years	Name of Projects
1	Project Manager				
2.	Quality Control Engineer				
3	Site Engineer				
4.	Site Supervisor				

NOTE: Scanned Attested copies of qualification certificates and details of work experience shall be submitted /uploaded.

MACHINERY: (for special work only)

PROFORMA- V / A			
Sr.No.	Equipment	Number	Owned/Leased/Assured access
1	2	3	4

PROFORMA- V / B			
Sr.No.	Equipment	Number	Owned
1	2	3	4

Note: The tenderer(s) shall furnish/upload the requisite Scanned Attested documents of ownership/leased of machineries. The undertaking from the suppliers will not be accepted.

PROFORMA - VI / A

Details of Existing Commitments and ongoing works –

PROFORMA - VI / A							
Description of work	Place	Contract No. & Date	Name & Addresses of employer	Value of Contract in Rs.	Scheduled date of completion	Value of work remaining to be completed	Anticipated Date of completion
1	2	3	4	5	6	7	8

Note: Scanned Attested copies of completion/performance certificates from the Engineer-in-Charge for each work should be annexed in the support of information furnished in the above proforma.

PROFORMA - VI / B

Details of works for which bids are already uploaded –

PROFORMA - VI / B							
Description of work	Place	Name & Addresses of employee	Value of Contract in Rs.	Time Period	Date on which decision is expected	Remarks	
1	2	3	4	5	6	7	

Note: Scanned Attested copies of certificates from the Engineer-in-charge for each work shall be annexed.

Annexure – F

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 and undertake that as specified in section 171 CGST Act, 2017 any reduction in rate of tax on supply of goods and services or the benefit of input tax credit shall be mandatorily passed on to BMC by way of commensurate reduction in prices.
- 2) I further say and undertake that I understand that in case the same is not passed on and is discovered at any later stage, BMC shall be at liberty to initiate legal action against me for its recovery including, but not limited to, an appeal to the Screening Committee of the GST Counsel.
- 3) I say that above said Irrevocable undertaking is binding upon me / my partners /Company / other Directors of company and also upon my / our legal heirs /assignee /Executor, administrator etc.
- 4) If I fail to compliance with the provision of the GST Act, I shall be liable for penalty / punishment or both as per provision of GST Act.

Whatever has been stated above is true and correct to my /our own knowledge and belief.

Solemnly affirmed at

DEPONENT

This day of

BEFORE ME

Interpreted, Explained and Identified by me.

UNDERTAKING FOR SITE VISIT

(On Rs. 500/- Stamp Paper to be submitted in Packet 'B')

I _____ Proprietor / Partners/ Directors having my/ our office
address_____

do hereby state & undertake as follows.

I, say that I have submitted my tender for the work of

_____having bid invitation No._____for the Brihanmumbai municipal
corporation

I affirm that , I have inspected the site of work before the submission of tender on
date_____& reckoned all probable difficulties as could be reasonably foressen
by us as experienced contractors. This is in pursuance of the relevant provision in this
behalf in the conditions of contract which shall be binding on us.

Place:

Dated:

Proprietor/Partners/Directors/POA Holder
(Seal of Firm/Co.)

Identified by me,

BEFORE ME

Undertaking for best price

(On stamp paper of Rs. 200/- duly notarized by notary with red seal and registration number)

Tender / Bid No. _____

To,

The Municipal Commssioner

For the Brihanmumbai municipal corporation

Sir ,

“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 , 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 any establishment / firm or any other person , who have filled in the tender for the aforesaid work.”

“ I / We do hereby further undertake that, we have offered the best prices for the subject supply / work as per the present market rates. **Further , we do here by undertake and commit that we have not offered / supplied the subject product / similar product / system or sub system in the past one year in the Maharashtra State for quantity variation upto - 50% or + 10 % at a price lower than that offered in the present bid 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 , for giving 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 whatsoever , I / We agree and undertake that I / We shall not claim in such case any amount , by way of damages or compensation for cancellation of the contract given to me / us or any work assigned to me / us or is withdrawn by the Corporation.”

However , in case of price difference, if it is a result of differential tax structures, different dollar value of Rupee, differential logistic of transport etc. Considering this aspect, before invoking the penalty, black-listing, I/We will be given a reasonable opportunity of being heard by representing our case as to why such price variation / differential has been arisen.

In case if the explanation submitted by me / us is unsatisfactory then action including forfeiture of despite and black-listing may be taken against me/us.

Tenderer's full Signature with full name & address with rubber stamp