



THANE MUNICIPAL CORPORATION
(WATER SUPPLY DEPARTMENT)

**APPOINTMENT OF CONSULTANT FOR CONDUCTING
STRUCTURAL AUDIT, NDT OF OLD STORAGES
(ESR/GSR AND SUMP & PUMP HOUSES) IN THANE
MUNICIPAL CORPORATION AREA, THANE**

Executive Engineer
Water Supply Department
Thane Municipal Corporation
Third Floor, Mahapalika Bhavan, Panchpakhadi,
Thane – 400 602 [M.S.] India

TENDER APPLICATION (Financial Bid)

To,
 The Executive Engineer
 Water Supply Department(Railadevi Ward Office)
 Thane Municipal Corporation
 Third Floor, Mahapalika Bhavan,
 Panchpakhadi, Thane – 400 602 [M.S.] India

I/We-----
 -----have read the various conditions to tender attached hereto and hereby agree to abide by the said conditions. I/We also agree to keep this tender open for acceptance for a period of 90 (Ninety) days from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our earnest money.

I/We offer to do this work of “**Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane**” at the rates quoted by us in the Financial Bid schedule and hereby bind myself/ourselves to complete the work in all respects within one eighty days from the date of issue of letter of acceptance of tender. I/We also hereby agree to abide by the General Condition of Contract and to carry out the work according to the Special Conditions of Contract and specifications for material and works as laid down by TMC.

I/We do not reserve the right to offer or modify the terms and conditions thereof in a manner not acceptable to TMC during a period of 90 (Ninety) days from the date of opening of tender or during the execution of contract whatsoever until a formal agreement is prepared and executed, the issuance of acceptance of the tendered rates shall constitute a binding contract between us as per the terms & conditions of the tender document subject to modification, as may be mutually agreed to between us as indicated in the letter of acceptance of my/our offer for this work.

I/We also understand that the quantities of various items of works will be finalized by TMC in consultation with the agency/consultant and the work will be executed by us as per final decision of TMC and claim will be as per actual quantity executed and as per rates quoted in the tender without any extra claim. We are, therefore, agreeable in case some of the items are deleted from the scope without making any claim/damages.

Signature of the Tenderer(s)

Tenderer(s) Address (complete postal address to be given)

Dated

Place

Tender No.	TMC/PRO/-----	
Organization Name	Thane Municipal Corporation	
Department Name	Water Supply Department	
Scope of Work	Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane	
Tender Notice	On line tender for the Above work of Thane Municipal Corporation are invited by Executive Engineer, Thane Municipal Corporation, Thane	
Tender Type	Open	
Bidder Nationality	National Competative Bidder (NCB)	
Type of Contract	Works	
Joint Venture	Allowed	
Schedule of E-Tender	Pre-bid meeting	
	Document downloading end date and time	From 22.01.2016to 29.01.2016upto 16.00 hrs.
	Last date & time of online Bid submission	On or before 29.01.2016upto 16.00 hrs.
	Opening of Bid (Online) if possible	29.01.2016, If possible.
	Bid validity period	180 Days from the date of opening of Envelope No.2
Payment Details	Document Fee	Rs. 676/-
	EMD	Rs. 20,000/-
	Estimated Value	Part A-Lump Sum quote Part B- Rs. 1,00,00,000/-
Eligibility Criteria	As Per Tender Documents	
General Terms & Conditions	As Per Tender Documents	
Other Details	As Per Tender Documents	
Information for online participation	<p>1. Internet site address for e-tendering activities will be www.thanecity.gov.in/E-procurement/E-tendering :https://eprocurement.synise.com/tmc/, Interested tenderers can view detailed tender notice and download tender documents from the above mentioned website.</p> <p>2. Tenderers who wish to participate in online tender have to register with the website through the “New User Registration” link provided on the home page. Bidder will create login id & password on their own in registration process.</p> <p>3. Tenderers who wish to participate in this tender need to procure Digital Certificate as per Information Technology Act-2000 using that they can digitally sign their electronic bids. Tenderers can procure the same from any of the CCA approved certifying agencies, or they may contact <u>e-Procurement Technologies Pvt. Ltd.</u> at below mentioned address and they will assist them in procuring the same. Tenderers who already have a valid Digital Certificate need not to procure the same. In case tenderers need any clarification regarding online participation, they can contact e-Procurement Technologies Pvt. Ltd Cell Phone : + 91 8308810326/7774061775</p>	

	<p>Website:E-procurement/E-tendering :https://eprocurement.synise.com/tmc/ Email: Help Desk : tmchelpdesk@synise.com</p> <ol style="list-style-type: none">4. Tenderers who wish to participate in e-tender need to fill data in predefined forms of EMD and Quote form only.5. Bidder should upload scan copies of reference documents in support of their eligibility of the bid.6. After filling data in predefined forms tenderers need to click on final submission link to submit their encrypted bid. Bidder can also submit EMD & Reference Documents in hard copy if such instructions are given by tendering authority.
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THANE MUNICIPAL CORPORATION, THANE
(WATER SUPPLY DEPARTMENT)
TENDER NOTICE

Thane Municipal Corporation invited Proposal for “**Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane**”

The tender Notice and tender forms will be available on websites www.thanecity.gov.in/E-procurement/E-tendering
:<https://eprocurement.synise.com/tmc/>, Help Desk : tmchelpdesk@synise.com
from date 22.01.2016to 29.01.2016 up to 16.00 hrs. On-line tender shall be received on the website stated above on or before date 29.01.2016 up to 16.00 hrs. and will be opened on the same day if possible.

Executive Engineer,
Water supply Department
Thane Municipal Corporation, Thane

ठाणे महानगरपालिका,ठाणे
पाणी पुरवठा विभाग
निविदा सुचना

ठाणे महानगरपालिकेच्या पाणी पुरवठा विभागातर्फे राप्रस मधील इंदिरानगर,रुपादेवी टेकडी रामनगर या परिसरातील जलकुंभ व संपची डागडुजी व दुरुस्तीची कामे करणेसाठी आर.सी.सी.तज्ञ सल्लागार यांचा अहवाल घेणे. ऑनलाईन निविदा सुचना व निविदा प्रपत्र ठाणे महापालिकेच्या अधिकृत संकेतस्थळ www.thanecity.gov.in व [https://eprocurement.synise.com /tmc](https://eprocurement.synise.com/tmc) येथे दि.२२/०१/२०१६ ते दि २९/०१/२०१६ या कालावधीत उपलब्ध असतील. सदरच्या निविदा ई-टेंडरिंग पध्दतीने दि.२९/०१/२०१६ रोजी ४.०० वाजे पर्यंत स्विकारण्यात येतील. ई-टेंडरिंगबाबत अधिक माहितीसाठी ई-निविदा कक्ष,ठाणे महानगरपालिका,ठाणे येथे संपर्क साधावा.

सही/-
कार्यकारी अभियंता(पा.पु.वि)
रायलादेवी प्रभाग समिती

Minimum Eligibility Criteria: The Firm / Company:-

1. Should have at least 3 years of experience in the field of Consultancy and conducting of Structural Audit, NDT of various Structures such as ESR / GSR/ S&P House / Other RCC Buildings.
2. Should have services of Licensed Structural Engineers registered with MCGM (Municipal Corporation of Greater Mumbai) or equivalent registration of other states/cities
3. Experience of Structural Audit as per the guidelines of the Indian Society of Structural Engineers is essential.
4. Should have successfully completed in last 3 Financial Years, at least three work-orders in the field of Consultancy for Structural Audit of various Buildings including conducting NDT, preparation of BOQ with estimates, drawings/specifications based on NDT for reputed organisations. Each consultancy work order inclusive of NDT work should be above Rs. **5.00** lakh. Completion certificate issued by the client should be enclosed.
5. Minimum average annual turnover for last three years shall be Rs. 50 Lakhs

Interested applicants should submit their application as per enclosed Proforma & Annexure giving requisite details. All documents should be duly signed and stamped by an authorized signatory of the firm / company and all facts/figures should be supported by appropriate documentary evidence / certificates.

BROAD SCOPE OF CONSULTANCY WORK

1. Structural audit shall be carried out as a qualitative assessment in accordance with latest guidelines of Indian Society of structural engineers. Visual health inspection of structure covering internal & external areas using light tapping hammer, marking in floor plans all the visible defects, deterioration and quantification.
2. Assessment of damages of RCC members through NDT (Non-Destructive Testing) with calibration chart for the site. Initially digital rebound hammer test and if necessary Ultrasonic Pulse Velocity test, Half Cell Potential test, carbonation depth test, core test, chemical test etc. necessity of which will be decided after inspection.
3. Finding the probable causes of damages, seepage / leakages and status of external plumbing / piping installations.
4. Preparation of detailed report based on visual inspection, NDT, suggesting/ phasing out priority wise repair/ remedial and retrofitting measures supported by photographs wherever necessary.
5. Preparation of detailed estimate for proposed structural repairs/ restoration, rectification work of specialised nature with detailed BOQ (Bill of Quantities).
6. Obtaining necessary permission from Thane Municipal Corporation as per requirement or if needed.
7. Preparation of tender documents, drawings (main & working) etc., for proposed structural repairs/ restoration, rectification work and assisting TMC in respect of publishing of notice, inviting Tender from the experienced contractors registered with the Government/Semi Government organisations. Evaluation of bids and recommendations.
8. Assistance for Execution of repairs / renovation works through successful tenderer under their supervision, including main structure and all other connected services.
9. Attending meetings with TMC officials, wherever required, in respect to above work regarding making addition/alteration in the drawings, specifications, make etc.
10. Quality check and certification of bills including extra items justifications and reasonableness of its rates.
12. Final report on the restoration work executed.

The work is phased out in four parts

A. Preliminary Work (Part of Report)

- i. Collection of preliminary data.
- ii. Pre-repair survey (field work}
- iii. Submission of survey report, general defects and damages, general recommendations, budgetary estimate in the descending order of preference, generalized bill of quantities

B. Pre-repair Planning.

- i. Evaluation of methodology and repair strategy.
- ii. Detailed estimation of quantities.
- iii. Estimated value of project and Bill of quantities(BOQ)
- iv. Assistance for Pre qualification of tenderer (Bidders).
- v. Assistance for Short-listing of qualified Bidders.
- vi. Preparation of Tender Documents.
- vii. Assistance for scrutiny of tenders & comparative statement.
- viii. Project planning, Bar-chart, progress report, alternate arrangement for support system, safety etc.

C. DURING REPAIR /RE-DEVELOPMENT WORK.

- i. Quality checking and Quality assurance with reports.
- ii. Certification for Quality compliance of work
- iii. Rejection/Devaluation of inferior work.
- iv. Joint measurement & recording
- v. Correspondence and reporting.
- vi. Routine meeting with Officers.
- vii. Certification of bills for payment as well as extra items & its rates justifications.

D. Post Repair.

- i. Preparation of Checklist and checking before handover of site
- ii. Checking of structure support system restoration.

The offer shall include the professional charges for all the consultancy services mentioned above and submitted as financial bid in as per E-tendering procedure of TMC. The other details such as registration with MCGM etc. or equivalent authority , qualification, work done details, etc. shall be submitted as per E-tendering procedure.

INSTRUCTIONS TO THE PQ BIDDER

1. The applicant should submit technical and financial documents along with Tender Document as per the E-tendering procedure laid down by TMC.
2. Tenders should be in the specified form (Non-transferable) which is to be downloaded from our website [www.thanecity.gov.in/ E-procurement/E-tendering](http://www.thanecity.gov.in/E-procurement/E-tendering) :<https://eprocurement.synise.com/tmc/>, Help Desk : tmchelpdesk@synise.com till 29.01.2016 The completed document should be submitted along with necessary papers in prescribed proforma on or before 29.01.2016 by 16.00 hrs
3. Tender will be received up to 16.00 hrs and will be opened on the same day at 1600 hrs, if possible in the presence of bidders who choose to be remain present.
4. Prebid meeting is arranged on 27.01.2016 at 11.00 hours.
5. The employer (TMC) does not bind itself to accept the lowest or any TENDER, and TMC reserves its right of accepting the whole or any part of the TENDER and the Bidder shall be bound to perform the same at the rate quoted.
6. TENDER submitted shall remain valid for 180 days from the date of opening for the purpose of acceptance and award of work, validity beyond 180 days from the date of opening shall be by mutual consent.
7. Before quoting, the Bidder shall inspect the site, to fully acquaint himself about the condition in regard to accessibility of the site, nature and extent of ground, working condition of site and locality including stacking of materials, installations of tools and plants (T&P) etc., conditions affecting accommodations and movement of labour etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the Employer in any circumstances.
8. No conditional rebate will be accepted.
9. Bidder should attach required proofs for the eligibility criterion while submitting tenders, though originals will be returned after verification thereof. Certificate in support of works of similar nature, for a minimum value as indicated in Technical Bid should also be submitted.
10. “JVs/ Consortiums/ MOUs shall be considered.” Lead Partner and JV partner shall jointly satisfy all the PQ
11. PQ bid notice, PQ/Technical bid document and Financial bid document are also available on [www.thanecity.gov.in/ E-procurement/E-tendering](http://www.thanecity.gov.in/E-procurement/E-tendering) :<https://eprocurement.synise.com/tmc/>, Help Desk : tmchelpdesk@synise.com
12. The Audit reports in hard copy should be submitted in triplicate along with a soft copy.
13. As all the structures are old, TMC may not be able to provide any DATA, Drawings & Documents related to the structures. All the necessary works related to the Job component shall be under the scope of the party.

14. Bidder shall offer his quote separately in two stages as below –

S.N.	Work Stage	Aproximate Cost	Remark
Part A	Carrying out Stuctireal Audit, Rehab Plan, Preparation & award of Tender Document	--	To be quoted as per FINANCIAL BID, Part A
Part B	Providing Project Management Consultancy for Rehabilitation Works	Rs. 1.00 Crores	To be quoted as per FINANCIAL BID, Part B on % basis on Aproximate cost estimate

Lowest bidder (L-1) will be selected based on total cost offered by bidder for part A and Part B.

15. Cost of blank tender form : Rs. 676/-
16. Earnest Money : Rs. 20,000/-
17. Security Deposit
- (a) Initial security deposit @ 2% : Rs. 40,000/-
- (b) Further security deposit to be deducted
- (c) From RA bills@ 3% : Rs. 60,000/-

EARNEST MONEY :

The amount of Earnest Money is **Rs. 20,000/- (Rs. Twenty Thousand Only)** and the amount of the tender form fee of **Rs. 676/- (Rs. Six Hundred Seventy Six Only)** The amount for tender form fee & earnest money is to be submitted as per e- tendering Procedure and online receipt for the same should be uploaded with the tender document along with technical bid.

EMD & Cost of Blank Tender shall be payable through one of the following modes ONLY:

- 1. Net-Banking**
- 2. Debit Card**
- 3. Credit Card**
- 4. RTGS / NEFT.***

.* For paying the Document Fees / EMD through the option (4) **RTGS / NEFT**, please follow the below process:

1. Please mention the following details while making the **RTGS/NEFT** payment from your Bank:
 - (a) Beneficiary account number - <TMCS+Bidder Code> For example, in case your Bidder Code is 123, kindly mention TMCS123 as the beneficiary account number.
(Bidder code shall be available through the E-Tendering portal)
 - (b) Beneficiary bank branch - **ICICI Bank, CMS, EMPIRE COMPLEX, LOWER PAREL, MUMBAI-400 013**
 - (c) Beneficiary IFSC code - **ICIC0000104**
2. One day after making the payment, tenderer shall log in to TMC (www.thanecity.gov.in/E-procurement/E-tendering :<https://eprocurement.synise.com/tmc/>) portal. While making payment for Document Fee / EMD, please select the RTGS/NEFT payment option at the document fee/ EMD payment screen. Upon doing so, tenderer shall be able to view the funds remitted by them through NEFT/RTGS as available balance.
3. Please proceed to make the payment. Upon doing so, the required amount to be paid through the Document fee/EMD, shall get appropriately deducted from the available balance and payment shall be confirmed real time.
4. A receipt number would also get generated after successful payment.
5. Kindly note that the payment is required to be made one day before you would like to make the document fee/EMD payment through our portal.

Please get in touch with e-procurement

support team in case any clarification is required.

(Note for Contractors/Tenderers :

It will be solely upon the tenderer's choice to select any of these payment options best suited to him. It is understood that the tenderer is aware of the payment cycle and other technical requirements/ payment process under each of these modes. It is tenderer's responsibility to see that the amount of EMD & cost of Blank Tender Form (BTC) are credited (in case of payment by NEFT/RTGS, the payment referred herein above may not mean final submission of EMD/BTC etc to TMC. The EMD/BTC etc shall be paid/ credited to TMC only when the bidder completes the Tender Document and other formalities online and submits the Tender), in the e-Tender System well before the scheduled time and date, to be able to proceed with final submission of his Tender along with the EMD & BTC to TMC. TMC will not be responsible for any failure on part of the bidder in submission of the Tender and/or the EMD/BTC etc. before scheduled time and date, for any reason whatsoever, including, inter-alia, noncredit of said amounts of EMD/ cost of Blank Tender

Form, and therefore no claims shall be entertained on these grounds.

Under this online payment system for e-Tendering the Tenders will not be submitted/ received by TMC unless the EMD & Cost of Blank Tender are received/ credited before scheduled time and date. Hence, bidder shall remit the said amount well in advance. It is clarified that the Tenders – both Technical and Financial – will not be considered for opening if EMD and BTC are not received/ credited before schedule time and date, for any reason whatsoever.

ALERT:-For the RTGS/NEFT payment option, considering that the payments are settled by RBI in batches, it is advisable that the bidder completes the leg of transfer of funds, from his bank account to his own User Account in the e-Tendering system, one day before his desired day of submitting his Tender to TMC.)

(Earnest money deposit Exemption certificate issued by state government organization shall not be accepted).

Earnest Money in the form of Cheque or any other Mode than prescribed above will not be accepted. Tenders of those contractors who do not deposit Earnest Money in one of the above accepted form shall be summarily rejected. Tender not accompanied by an Earnest Money Deposit are liable to be rejected as non responsive. If during the tender validity period, the tenderer withdraws his tender, the Earnest money deposit shall be forfeited and the tenderer may be disqualified from tendering for further works in the Thane Municipal Corporation, Thane for the period of one year.

The Earnest Money Deposit will be returned to the unsuccessful tenderers immediately after issue of work order to successful tenderer. Tenderer to note that EMD of all those tenderers will be refunded on written request made by the tenderer. On receiving written request, Engineer -in -charge shall forward it to finance department within three working days. The earnest money deposit of the successful tenderer shall be returned after he finishes initial security deposit and duly enters into contract.

Within ten days from the date of receipt by him of the letter of having acceptance of his tender, the successful tenderer shall furnish the required Initial Security Deposit and attend the office of the City Engineer, Thane Municipal Corporation, Dr. Almeda Road, Panchpakhadi, Thane for execution of the contract document. If the successful tenderer fails to furnish Initial Security Deposit or to execute the contract his earnest money deposit shall be forfeited and the tenderer may be disqualified from tendering for further works in the Thane Municipal Corporation, Thane.

GENERAL CONDITIONS OF CONTRACT

Definitions

'The Contract' means the documents forming the tender and acceptance thereof and the formal agreement executed between TMC and the Consultant, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from by the Employer / Consultant time to time and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

In the contract the following expressions shall, unless the context otherwise requires, have the meaning hereby respectively assigned to them.

1.1 **'TMC / Employer'** means TMC having its Head Office at Chandan Wadi, PAnch Pakhadi, Thane -400601 and includes its representatives, successors and assigns.

1.2 **'Head Office'** means the Head Office of TMC and includes any other offices as prescribed by TMC from time to time for that purpose.

1.3 **'Sanctioning Authority'** means authority nominated to exercise power of approval, sanction and acceptance concerning administrative, financial and technical aspects of transactions done on behalf of TMC.

1.4 **'Employer'** means TMC and includes its representatives, successors and assigns.

1.5 **'Site Engineer' or 'Engineer'** means an Engineer appointed by the Employer as their representative to give instructions and supervise the work of the consultant/consultant at site.

1.6 **'The Consultant or Consultants'** means the firm or agency or individual engaged by the Employer to execute the work. It shall also include their legal representative(s), successors or assigns.

1.7 **'Contract value'** means the value of the entire work as stipulated in the work order conveying acceptance of the tender subject to such additions thereto or deductions there from as may be made under the provision herein after contained.

1.8 **'Tendered value'** means the value of the entire work as stipulated in the work order.

1.9 **'Works' or 'work'** means the permanent or temporary work(s) or testing or consultancy work described in the 'Scope of Work' and/or to be executed in accordance with the contract and includes materials, apparatus, equipment,

Consultant	No.of Correction	Executive Engineer
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temporary supports, fittings and things of all kinds to be provided, the obligations of the consultant hereunder and work to be done by the consultant under the contract.

1.10 **'The Site'** means the premises, into or through which work is to be executed under the contract or any adjacent premises, which may be allotted or used for the purpose of carrying out the contract.

1.11 **'Drawings'** means the drawings prepared by Consultant/TMC and issued to the Engineer / Site Engineer and referred to in the specifications and any modifications of such drawings as may be issued by the Consultant/Employer / Site Engineer from time to time.

1.12 **'Specifications'** means the specifications referred to in the tender and any modifications thereof as may be furnished or approved by the Employer time to time.

1.13 **'Market Rate'** means the rate as decided by the Employer on the recommendations of their engineer based on the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere to cover, all overheads and profits.

1.14 **'Schedule(s)'** referred to in these conditions mean the relevant schedule(s) annexed to the tender papers.

1.15 **'Local Controlling Authority'** means the Local Municipal Authority or any other appropriate statutory authority viz. Town Planning Department, Town Development Authority, Town/City Improvement Trust, Electricity Board, Water and Sewerage Department, Civil Aviation Authority, High-rise Building Committee, Lift Inspectorate, Telephone Department, Pollution Control Board, Fire Board and any other authorities as the case may be according to whose rules and regulations a building within its jurisdiction is to be designed and approval of the drawings to be obtained.

1.16 **'Month'** means calendar month.

1.17 **'Week'** means seven consecutive days.

1.18 **'Day'** means a calendar day beginning and ending at 00 Hrs and 24 hrs respectively.

2.0 **Scope and performance**

Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.

3.0 **Work to be carried out**

The work to be carried out under the contract shall, except as otherwise provided in these conditions, include all Labour, Materials, Tools, Plants, Tackles, Equipment and

Transport which may be required in preparation of and for and in the full and entire execution and completion of the work. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

4.0 **Sufficiency of Tender**

The Consultant 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 Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

4.1 **Scope of Work**

The consultant shall carry out complete and maintain the said work in every respect strictly in accordance with this contract and with the directions of and to the satisfaction of the Employer to be communicated through TMC. The Employer at the directions of the engineer from time to time shall issue further drawings and/or written instructions, details, directions and explanations which are hereafter collectively referred to as Engineer's instructions in regard to the variation or modification of the design, quality or quantity of work or addition or omission or substitution of any work. Any discrepancy in the drawings or between the BOQ and/or drawings and/or specifications should be brought to the notice of Engineer before taking up the work.

1. **Location / Address Of Site**

Various parts of City Limits of Thane Municipal Corporation, Thane

2. **Rates For Payment**

The rates given in the BOQ tendered by the consultant/agency and as accepted by TMC will form the basis of payment for such items under this contract.

1. No material price variation or wages escalation on any account whatsoever the compensation for force majeure etc. shall be payable under the contract.

2. The rates for any item work not included in the (Schedule of items, Rates and quantities) and which the consultant may be called upon to do by TMC shall be fixed by the supplementary written agreement between the consultant and TMC before the particular item or items of work is /are executed in the event of such agreement not being entered into and executed TMC may execute these works by making alternative arrangements. TMC will

not be responsible for any loss or damages on this account.

3. It should be specifically noted by the tenderer that no separate loading, unloading and lead charges for materials and site visits shall be paid for by TMC and the rates quoted by the tenderer/s shall be inclusive of all these charges.

4. Should there arise any items which may be necessary for the smooth completion of work but which does not appear in the Schedule of items, rates and Quantities attached with Tender, items rate will be fixed by analysis of actual inputs of all types including labour and material or derived from the labour and material rates given in the latest CPWD /MJP Standard Schedule of Rates for current year. The rates for such non-scheduled items occurring during the course of construction shall be payable subject to the approval of the competent authority.

No items of work requiring non-schedule rates will be carried out unless ordered to do so by TMC in writing.

5. Payment for the work done will be made to the consultant only when the formal agreement has been executed between the parties and as per the Payment schedule,

7. Discrepancies And Adjustment of Errors

- The several documents forming the contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale.

- Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Consultant from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

- Unless otherwise specified, CPWD Specifications 1996 volume I - VI with upto date corrections slips and Revised CPWD Specifications 2002 for cement mortar, cement concrete and RCC works shall be followed in general. Any additional item of work, if taken up subsequently, shall also conform to the relevant CPWD specifications mentioned above. Should there be any difference or discrepancy between the description of items as given in the schedule of quantities, general and special conditions of contract, particular specifications for individual items of work and I.S. Codes etc., the following order of preference shall be observed :

Description of items as given in Schedule of quantities.

- Special conditions of contract

Consultant	No.of Correction	Executive Engineer
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- General Conditions of contract
- Particular specifications
- CPWD Specifications. I.S. Codes.
- Decision of Employer / Site Engineer.

8. **Work Order**

Within the validity period of the tender, the Employer shall issue a work order by registered post or otherwise dispatching at the address of the consultant as given in the tender to enter into a contract for execution of the work as per the terms of the tender. The work order shall constitute a binding contract between the Employer and the Consultant.

9. **Contract Document**

On receipt of work order from the Employer, the successful tenderer shall be bound to implement the contract and within seven days thereof, he shall sign an agreement on a non judicial stamp paper of appropriate value. The consultant shall be furnished, one certified copy of the contract documents together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.

10. **Language**

The language in which the contract documents shall be drawn shall be English.

11. **Security Deposit**

As stated above

12. **Liquidated Damages**

If the consultant fails to maintain the required progress as per the stipulated time period or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Employer on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below:

½ % of the contract amount per week subject to a maximum of 10% of the contract amount. The amount of compensation may be adjusted or set off against any sum payable to the Consultant under this contract with the Employer.

13. **Secured Advance**

No secured advance will be paid for any of the materials brought to site for carrying out the works under this contract.

14. Mobilisation Advance

No mobilisation advance will be paid for this contract.

15. Escalation

No escalation and payment due to increase in prices / wages will be made to the consultant. The rates quoted by the consultant shall remain firm throughout till completion of the work and nothing extra beyond unit rates shall be paid on account of any reason whatsoever.

16. Detailed drawings and instructions

The Employer shall furnish with reasonable promptness additional instructions by means of drawings or otherwise necessary for proper execution of the work at site. All such drawings and instructions shall be consistent with the contract documents, true developments thereof and reasonably inferable there from. The work shall be executed in conformity therewith and the consultant shall on receipt of the work order prepare and submit a detailed programme schedule indicating therein the date of start and completion of various activities to the Employer. In case structural drawings or any other drawings like plans, elevation are not readily available with the employer (TMC) the consultant/bidder are required to prepare all necessary drawings at the site on their own for completing the structural audit report etc.

17. Ownership of drawings

All drawings, specifications and copies thereof furnished by the Employer if any are the properties of the Employer. They are not to be used on any other work.

18. Setting out Work

The consultant shall set out the work and shall be responsible for the true and perfect setting out of the same including correctness of the positions, levels, dimensions, and alignment of all parts thereof. The consultant shall get it approved from the Engineer before commencing and proceeding with the work. If at any time, any error in this respect appears during the progress of the works, irrespective of the fact that the layout had been approved by the Engineer, the consultant shall be responsible for the same. The consultant shall at his own expenses rectify such error, if so, required to satisfaction of the Employer / Consultant.

19. Materials, Appliances and Employees

The consultant shall, at his own expense, provide all materials, required for the works and no material required for carrying out the work shall be supplied by the Employer.

20. Quality of Materials, Workmanship & Test

All materials and workmanship shall be best of the respective kinds described in the contract and in accordance with Employer's / Consultant's / Site Engineer's instructions and shall be from time to time subject to such tests as the Employer /

Consultant/Site Engineer may direct at the place of manufacture or fabrication or on the site or an approved testing laboratory. The consultant shall provide such assistance, instruments, machinery, labour and materials as are normally required for examining, measuring, sampling and testing any material or part of the work before incorporation in the work for testing as may be selected and required by the Employer / Consultant/ Site Engineer. A list indicating names of various approved brands has been attached with the tender. The consultant shall, wherever, applicable use material as per the approved brand only.

21. Work to be executed in accordance with specifications, drawings, orders etc.

The consultant shall execute the whole and every part of the work in the most substantial and workman like manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The consultant shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Employer and the consultant shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions. The Consultant shall take full responsibility for adequacy, suitability and safety of all the works and methods of execution.

22. Action in case Work 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 Employer / Consultant including all the superior officers, officer of the Quality Control Organisation or TMC and the consultant 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 consultant, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for the purpose. Orders given to the Consultant's agent shall be considered to have the same force as if they had been given to the consultant himself.. In such case, the Employer on the recommendations of Engineer may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Employer on the recommendations of Engineer 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 items 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 remove and re-executed at the risk and cost of the consultant. Decision of the Employer to be conveyed in writing in respect of the same will be final and binding on the consultant.

23. Consultant/Agency to supply tools & plants etc.

The consultant shall provide at his own cost all materials, plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or

referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Employer / Consultant as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work.

24. Protection of works and property

The consultant shall continuously maintain adequate protection of all his work from damage and shall protect the Employer's properties from injury or loss arising in connection with contract. He shall make good any such damage, injury, loss resulting due to his fault or negligence except due to causes beyond his control. He shall take adequate care and steps for protection of the other floors and adjacent properties. The consultant shall take all precautions for safety and protection of his employees on the works and shall comply with all applicable provisions of Government and local bodies safety laws and building codes to prevent accidents, or injuries to persons or property in or adjacent to his place of work. The consultant shall take insurance covers (i.e. **Contractor's All Risk Policy**) as specified elsewhere in the contract at his own cost. The policy shall be taken in joint names of the consultants and Employer.

In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained not withstanding any other provisions elsewhere in the contract agreement. Also, the Consultant shall make good, at his own cost, the damages caused, if any.

25. Assignment and subletting

The whole of work included in the contract shall be executed by the consultant and he shall not directly entrust and engage or indirectly transfer assign or underlet the contract or any part or share thereof or interest therein without the written consent of the Employer through the Engineer and no undertaking shall relieve the consultant from the responsibility of the consultant from active superintendence of the work during its progress.

The contract shall not be assigned or sublet without the written approval of the Employer / Consultant. And if the consultant shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the consultant, or any of his servants or agent to any public officer or person in the employment of Employer / Consultant or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Employer shall have power to adopt any of the courses specified under clause of "when contract can be determined" hereof as the Employer may deem best suited to the interest of Employer and in the event of any of these courses being adopted the consequences specified in the said Clause of shall ensure.

26. Consultant's superintendence

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The consultant shall give necessary personal superintendence during the execution of the works and as long, thereafter, as the Employer / Consultant may consider necessary until the expiry of the defects liability period, stated hereto. The consultant shall depute necessary technical staff for supervision of work.

27. Quantities

The rates quoted for various items shall remain valid for variation of quantity against individual item to any extent. The payment to the consultant shall be made as per the actual work executed based on the joint measurement and quoted unit rates for individual items. The quantities in the BOQ are only indicative and may increase or decrease, however the rate quoted shall remain firm.

28. Works to be measured

The Engineer shall, except as otherwise provided, ascertain and determine by measurement the value in accordance with the contract of work done. All measurement of all items having financial value shall be entered in Measurement Book and / or level field book so that a complete record is obtained of all works performed under the contract.

If for any reason, the consultant or his authorized representative is not available and the work of recording measurements is suspended by the Engineer, the Employer shall not entertain any claim from consultant for any loss or damages on this account.

If the consultant or his authorized representative does not remain present at the time of such measurements after the consultant or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Site Engineer shall be deemed to be accepted by the Consultant. All authorized extra work, omissions and all variations made shall be included in such measurements.

The consultant shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

The Employer / Consultant may cause either themselves or through other representative of Employer / Consultant to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

It is also a term of this contract that recording of measurements of any item of work in the measurement book and / or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the consultant from liabilities from any over measurement or defects noticed till completion of the defects liability period.

29. Certificate of payment

The consultant shall submit interim or running account bill on completion of work in respect of each colony / location. The consultant shall submit interim bills only after taking actual measurements. Engineer shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work. Payment on account of amount admissible shall be made on certification of the Engineer to which the consultant is considered entitled by way of interim payment at such rates as decided by the Engineer. The amount admissible shall be paid by 15th working day after the day of certification of the bill by the Engineer subject to the bill is found to be in order by the Employer with no discrepancies. The Employer shall recover the statutory recoveries, other dues including the retention amount from the certificate of payment.

All such interim payment shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate (s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is / are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Employer / Consultant / Site Engineer under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

Pending consideration of extension of date of completion, interim payments shall continue to be made as herein provided, without prejudice to the right of the Employer to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the Employer.

The R/A payments so made shall be adjusted in the subsequent interim bill by taking detailed measurements thereof. The Engineer shall have power to withhold the certificate if the work or any part thereof is not carried out to their satisfaction.

Under section 194-C of the Income Tax Act, 1961 deduction of 2% plus surcharge as applicable on Income Tax will be made for sums paid for carrying out the work under this contract. In case of supply contract, ballast, deduction of 2% income Tax will be made for the sum paid for labour portion only (i.e. loading, unloading, stacking, measurement and laying etc) . Sales tax including, turn over tax on works contract, octroi, royalty, toll tax, local tax, VAT, duties/levies as well as services and any other tax levied by central govt., state govt. or local bodies, as applicable on the date of quoting the rates and any change therein at a later date, shall be considered to be included in the rates quoted by the tenderer/s in the tender schedule, unless otherwise mentioned/quoted.

TMC shall deduct the sales tax/turn over tax or any other tax from the consultant's bill

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at the rate as applicable as per rules framed by concerned Govt. /local bodies from time to time and remit it to concerned department. and shall issue a certificate regarding tax/duties/levies so deducted on demand by the consultant.

30. Final Measurement

The final bill shall be submitted by the consultant in the same manner as specified in interim running account bills within one month of issue of virtual completion certificate for the work.

31. Variations/Extra Items of Work

No alteration, omission or variation ordered in writing by the Employer / Engineer shall vitiate the contract. In case the Employer /Consultant thinks proper at any time during the progress of works to make any alteration in, or additions to or omission from the works or any alteration in the kind or quality of the materials to be used therein, the Employer / Consultant shall give notice thereof in writing to the consultant or shall confirm in writing within seven days of giving such oral instructions to the consultant and the consultant shall alter to, add to, or omit from as the case may be in accordance with such notice(s) but the consultant shall not do any work extra to or make any alteration or additions to or omissions from the works or any deviation from any of the provisions of the contract, stipulations, specifications or contract drawings without previous consent in writing of the Employer / Consultant and the value of such extras, alterations, additions or omissions shall in all cases be determined by the Employer on the recommendation of the Engineer and the same shall be added to or deducted from the contract value, as the case may be.

32. Valuation of Variations

No claim for an extra shall be allowed unless it shall have been executed under the authority of the Engineer with the concurrence of the Employer as herein mentioned. Any such extra is herein referred to as authorized extra and shall be made in accordance with the following provisions:

- i) The net rates or prices in the contract shall determine the valuation of the extra work where such extra work is of similar character and executed under similar conditions as the work priced herein.
- ii) Rates for all items, wherever possible should be derived out of the rates given in the priced schedule of quantities.
- iii) It is further clarified that for all such authorized extra items where rates cannot be derived from the tender, the consultant shall submit rates duly supported by rate analysis worked on the "market rate basis" for material, labour, hire/running charges of equipment and wastages etc plus 15% towards establishment charges, consultant's overheads and profit. Such items shall not be eligible for escalation.

33. Work by other agencies

The Employer/Consultant reserves the rights to use premises and any portion of the site for execution of any work not included in the scope of this contract which it may

desire to have carried out by other persons simultaneously and the consultant shall not only allow but also extend all reasonable facilities for the execution of such work(s). Such work(s) shall be carried out in such manners not to impede the progress of the works included in the contract.

34. Work in shifts and holidays

For completing the work in time, the Consultant might be required to work in two or more shifts (including night shifts) or on Holidays. No claim whatsoever shall be entertained on this account, notwithstanding the fact that the Consultant may have to pay extra amounts for any reason, to the labourer and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Consultant with them.

35. Dismantled material Employer property

The consultant shall treat all useful materials obtained during dismantling/ testing of the building/premises as Employer's property and such materials shall be disposed off to the best advantage of Employer according to the instructions in writing issued by the Employer / Consultant.

36. Maintenance of Registers

The consultant shall maintain the following registers at site of work and should produce the same for inspection of the Employer / Consultant whenever desired by them. The consultant shall also maintain the records/registers as required by the local authorities/Government from time to time.

- i) Daily progress register/ Test Register
- ii) Site order book

37. Permits, Laws and Regulations

Permits and licenses required for execution of the work shall be obtained by the consultant at his own expenses. The consultant shall give necessary notices and comply with the local regulations, laws, and ordinances rules, applicable for execution of work. If the consultant performs any act, which is against the local law, rules and regulations, he shall meet all the costs and consequences arising there from and shall indemnify the Employer against any legal actions arising there from. The consultant shall arrange to obtain completion certificate from the relevant local authority after completion of work. The rates quoted by the consultant are inclusive of obtaining such approval(s) and nothing extra beyond quoted rates shall be paid to the consultant on this account.

38. Local Laws, Acts, Regulations

The consultant shall strictly adhere to all prevailing labour laws inclusive of contract labour (regulation and abolition act of 1970) and other safety regulations. The consultant shall comply with the provision of all labour legislation including the latest requirements of all the Acts, laws, and any other regulations that are applicable to the execution of the project.

1. Minimum Wages Act, 1948 (Amended)
2. Payment of Wages Act 1936 (Amended)
3. Workmen's Compensation Act 1923 (Amended)
4. Contract Labour Regulation and Abolition Act 1970 and Central Rules ended
5. Apprentice Act 1961 (Amended)
6. Industrial Employment (Standing Order) Act 1946 (Amended)
7. Personal Injuries (Compensation Insurance) Act 1963 and any other modifications
8. Employees' Provident Fund and Miscellaneous Provisions Act 1952 and amendment thereof
9. Shop and Establishment Act
10. Any other Act or enactment relating thereto and rules framed there under from time to time.

39. Commencement of Works

The date of commencement of the work will be reckoned as three days from the date of issue of work order by Employer or the first day when the consultant is handed over the site for taking up execution of the work whichever is later.

40. Time for completion

Time is the essence of the contract and shall be strictly observed by the consultant. The entire work shall be completed within a period of **90 days** from the date of commencement of work. If required in the contract or as directed by the Employer, the consultant shall complete certain portions of work before completion of the entire work. However the completion date shall be reckoned as the date by which the whole work is completed as per the terms of the contract.

41. Rate of progress

Should the rate of progress of the work or any part thereof be at any time be in the opinion of the Employer / Consultant is slow, to ensure the completion of the whole of the work by the prescribed time or extended time for completion, the Employer / Consultant shall thereupon take such steps as considered necessary by the Employer / Consultant to expedite progress of work so as to complete the work by the prescribed time or extended time. Such communications from the Employer / Consultant neither shall relieve the consultant from fulfilling obligations under the contract nor will he be entitled to raise any claims arising out of such directions.

42. Extension of Time

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42.1 If the work(s) be delayed by:

- force majeure, or
- abnormally bad weather, or
- serious loss or damage by fire, or
- civil commotion, location commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- delay on the part of other consultants or tradesmen engaged by Employer in executing work not forming part of the Contract, or
- any other causes which, in the absolute discretion of the Employer is beyond the Consultant's control.

Then upon the happening of any such event causing delay, the consultant shall immediately give notice thereof in writing to the Employer but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Employer / Consultant to proceed with the works.

42.2 Request for extension of time, to be eligible for consideration, shall be made by the consultant in writing within two days of the happening of the event causing delay. The Consultant may indicate in such a request the period for which extension is desired.

42.3 In any such case, the Employer on the basis of recommendations of Engineer will give a fair and reasonable extension of time for completion of work. Such extension shall be communicated to the Consultant by the Employer in writing, within 3 days of the date of receipt of such request. Non application by the consultant for extension of time shall not be a bar for giving a fair and reasonable extension by the Employer and this shall be binding on the consultant.

43. Virtual Completion Certificate (VCC)

Soon after the completion of the work, the Consultant shall give notice of such completion to the Employer and within 3 days of the receipt of such notice, the Employer shall inspect the work and if there is no defect in the work, the Engineer on behalf of the Employer shall furnish the consultant with a virtual completion certificate, otherwise a provisional virtual completion certificate of physical completion indicating defects (a) to be rectified by the consultant and / or (b) for which payment will be made at reduced rates, shall be issued.

On successful completion of entire works covered by the contract to the full satisfaction of the Employer, the consultant shall ensure that the following works are also completed to the satisfaction of the Employer.

a) Clear the site of all scaffolding, wiring, pipes, surplus materials, consultant's labour, equipment and machinery.

b) Demolish, dismantle and remove the consultant's site office, temporary works, structures including labour sheds/camps and constructions and other items

and things whatsoever brought upon or erected at the site or any land allotted to the consultant by the Employer and not incorporated in the permanent works.

- c) Remove all rubbish, debris etc. from the site as required by the Employer.
- d) Shall put the Employer in undisputed custody and possession of the site.
- e) Shall hand over the work in a peaceful manner to the Employer.
- f) All defects/imperfections have been attended and rectified as pointed out by the Employer / Engineer to the full satisfaction of Employer. Upon the satisfactory fulfillment by the consultant as stated above, the consultant shall be entitled to apply to the Engineer for virtual completion of the work. The Engineer shall within seven (7) days of the receipt of the application for virtual completion certificate (VCC), issue a VCC in respect of the work for which the VCC has been applied.

This issuance of a VCC shall be without prejudice to the Employer's rights and consultant's liabilities under the contract including the consultant's liability for defects liability period nor shall the issuance of VCC in respect of the works or work at any site be construed as a waiver of any right or claim of the Employer against the consultant in respect of works or work at the site and in respect of which the VCC has been issued.

44. When Contract can be determined

Subject to other provisions contained in this clause, the Employer may, without prejudice to his any other rights or remedy against the consultant in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the cases.

45. Suspension of work

- i) The consultant shall, on receipt of the order in writing of the Employer (whose decision shall be final and binding on the consultant) suspend the progress of works or any part thereof for such time and in such manner as the Employer / Consultant may consider necessary so as not cause any damage or injury to the work already done or endanger the safety thereof for any of following reasons :.
 - a) On account any default on the part of the consultant, or
 - b) For proper execution of the works or part thereof for reasons other than the default of the consultant, or
 - c) For safety of the works or part thereof.

The consultant shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Employer / Consultant.

ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above :

The consultant shall be entitled to an extension of time equal to the period of every such suspension. No compensation whatsoever shall be paid on this account.

If the works or part thereof is suspended on the orders of the Employer for more than three months at a time, except when suspension is ordered for reason (a) in sub-para (i) above, the consultant may after receipt of such order serve a written notice on the Employer requiring permission within fifteen days from receipt by the Employer of the said notice, to proceed with the work or part thereof in regard to which progress has been suspended and if such permission is not granted within that time, the consultant, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by the Employer or where it affects whole of the works, as an abandonment of the works by the Employer, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Employer. In the event of the consultant treating the suspension as an abandonment of the contract by the Employer, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Employer on the recommendations of the Engineer may consider reasonable, in respect of salaries and / or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the consultant provided, the consultant submits his claim supported by details to the Employer within 30 days of the expiry of the period of 3 months.

46. Foreclosure of contract due to abandonment or reduction in scope of work

If at any time after acceptance of the tender, the Employer decides to abandon or reduce the scope of the work for any reason whatsoever and does not require the whole or any part of the works to be carried out, the Employer shall give notice in writing to that effect to the consultant and the consultant shall act accordingly in the matter. The consultant shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

47. Cancellation of contract in full or part

If consultant:

1. at any time makes default in proceeding with the works or any part of the work with the due diligence and continues to do so after a notice in writing of 7 days from the Employer / Consultant; or
2. commits default to complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7

days after a notice in writing is given to him in that behalf by the Employer / Consultant; or

3. fails to complete the work, on or before the stipulated date of completion, and does not complete them within the period specified in a notice given in writing in that behalf by the Employer / Consultant; or

The Employer may, without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to Employer, by a notice in writing to cancel the contract as a whole or only such items of work in default from the Contract.

The Consultant / Site Engineer shall on such cancellation by the Employer have powers to:

take possession of the site and any materials, constructional plant, implements, stores, etc. thereon; and / or
carryout the incomplete work by any means at the risk and cost of the consultant.

On cancellation of the contract in full or in part, the Employer through Engineer shall determine what amount, if any, is recoverable from the consultant for completion of the works or part of the works or in case the works or part of the works is not to be completed, the loss or damage suffered by Employer. In determining the amount, credit shall be given to the consultant for the value of the work executed by him up to the time of cancellation, the value of consultant's materials taken over and incorporated in the work and use of plant and machinery belonging to the consultant.

Any excess expenditure incurred or to be incurred by Employer in completing the works or part of the works or the excess loss or damages suffered or may be suffered by Employer as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Employer in law be recovered from any moneys due to the consultant on any account, and if such moneys are not sufficient the consultant shall be called upon in writing and shall be liable to pay the same within 30 days.

If the consultant shall fail to pay the required sum within the aforesaid period of 30 days, the Employer shall have the right to sell any or all of the consultants' unused materials, constructional plant, implements, temporary buildings, etc and apply the proceeds of sale thereof towards the satisfaction of any sums due from the consultant under the contract and if thereafter there be any balance outstanding from the consultant, it shall be recovered in accordance with the provisions of the contract.

Any sums in excess of the amounts due to Employer and unsold materials, constructional plant, etc., shall be returned to the consultant, provided always that if cost or anticipated cost of completion by Employer of the works or part of the works is less than the amount which the contractor would have been paid had he completed the works or part of the works, such benefit shall not accrue to the consultant.

48. Settlement of Disputes and Arbitration

48.1 Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of the or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completing or abandonment thereof shall be dealt with as mentioned hereinafter:

48.2 If the consultant considers any work demanded of his to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Site Engineer any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 7 days request the Engineer in writing for written instruction or decision. Thereupon, the Engineer shall give his written instruction or decision within a period of one week from the receipt of the consultant's letter.

If the Engineer fails to give his instructions or decision in writing within the aforesaid period or if the consultant is dissatisfied with the instructions or decision of the Engineer, the consultant may within 7 days of the receipt of Engineer's decision, appeal to the Employer who shall afford an opportunity to the consultant to be heard, if the letter so desires, and to offer evidence in support of his appeal. The Employer shall give his decision within 15 days of receipt of consultant's appeal. If the consultant is dissatisfied with this decision, the consultant shall within a period of 30 days from receipt of the decision, give notice to the Employer for appointment of a sole arbitrator failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator.

48.3 For the purpose of appointing the sole arbitrator referred to above, the Employer will send within thirty days of receipt by him the written notice aforesaid to the consultant a panel of three names of persons who shall be presently unconnected with the organization for which the work is executed.

48.4 The consultant shall on receipt by him of the names as aforesaid select any one of the persons named to be appointed as a sole arbitrator and communicate his/her name to the Employer within thirty days of receipt by him of the names. The Employer shall thereupon without any delay appoint the said person as the sole arbitrator. If the consultant fails to communicate such selection as provided above within the period specified, the Employer shall make the selection and appoint the selected person as the sole arbitrator. If the Employer fails to send to the consultant the panel of three names as aforesaid within the period specified, the Consultant shall send to Employer a panel of three names of three persons who shall be unconnected with either party. The Employer shall on receipt by him of the names as aforesaid select any one of the persons named to be appointed as a sole arbitrator and

communicate his / her name to the consultant within thirty days of receipt by him of the names.

- 48.5 If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another sole arbitrator shall be appointed as aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.
- 48.6 The work under the contract shall however continue during the arbitration proceedings and no payment payable to the consultant relating to the disputed items shall be withheld on account of such proceedings.
- 48.7 The arbitrator from time to time with the consent of the parties enlarges the time for making and publishing the award.
- 48.8 The arbitrator shall give a separate award in respect of each dispute or difference referred to him. The arbitrator shall decide each dispute in accordance with terms of the contract and give a reasoned award.
- 48.9 It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Employer of the appeal.
- 48.10 It is also a term of this contract that no person other than a person appointed by such Employer, as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.
- 48.11 It is also a term of this contract that if the consultant does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 60 days of receiving the intimation from the Employer that the final bill is ready for payment, the claim of the consultant shall be deemed to have been waived and absolutely barred and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims. Further it is agreed that for the purpose of this clause such notice is deemed to be received by the consultant within two days of posting of the letter by TMC or delivered by hand immediately after receipt thereof by the consultant whichever is earlier. Further a letter signed by the officials of TMC that the letter was posted to the consultant shall be conclusive.
- 48.12 The arbitration shall be conducted in accordance with the provisions of the Arbitration and conciliation Act, 1996(26 of 1996) or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.
- 48.13 It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate

award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs.50,000/-, the arbitrator shall give reasons for the award.

- 48.14 It is also a term of the contract that if any fees are payable to the arbitrator, these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties calling them to submit their statement of claims and counter statements of claims. The venue of the arbitration shall be such place as may be fixed by the arbitrator in his sole discretion. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

- 48.15 The award of the arbitrator shall be final and binding on both parties.

49.0 Force Majeure

- 49.1 Neither consultant nor TMC shall be considered in default in performance of their obligations if such performance is prevented or delayed by events such as war, hostilities, revolution, riots, civil commotion, strikes, lockout, conflagrations, epidemics, accidents, fire, storms, floods, droughts, earthquakes or ordinances or any act of god or for any other cause beyond the reasonable control of the party affected or prevented or delayed. However a notice is required to be given within 30 days from the happening of the event with complete details, to the other party to the contract, if it is not possible to serve a notice, within the shortest possible period without delay.
- 49.2 As soon as the cause of force majeure has been removed, the party whose ability to perform its obligations has been affected, shall notify the other of such cessation and the actual delay incurred in such affected activity adducing necessary evidence in support thereof.
- 49.3 From the date of occurrence of a case of force majeure, obligations of the party affected shall be suspended during the continuance of any inability so caused. With the cause itself and inability resulting therefrom having been removed, the agreed time of completion of the respective obligations under this agreement shall stand extended by a period equal to the period of delay occasioned by such events.
- 49.4 Should one or both parties be prevented from fulfilling the contractual obligations by a state of force majeure lasting to a period of 6 months or more,

the two parties shall mutually decide regarding the future execution of this contract.

50. Peaceful handing over of the premises

It shall be the responsibility of the consultant to see that the premises under furnishing is not occupied by anybody unauthorised during execution of work and is handed over to the Employer with vacant possession of complete furnishing. If such premises though completed are occupied illegally, then the Employer shall have the option to refuse to accept the said premises in that position. Any delay in acceptance on this account will be treated as the delay in completion and for such delay a levy up to 5% of tendered value of work may be imposed by the Employer whose decision shall be final both with regard to justification and quantum and be binding on the consultant.

However, the Employer through a notice may require the consultant to remove the illegal occupation any time on or before completion and delivery of the work.

51. Consultant liable for damages, defects during defects liability period

If the consultant or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, enclosure, water pipe, cables, drains, electric or telephone post or wires, contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within 12 months of issue of virtual completion certificate issued by the Engineer on behalf of the Employer as aforesaid arising out of defect or improper materials or workmanship, the consultant shall, upon receipt of a notice in writing on that behalf through the Engineer, make the same good at his own expense or in default, the Employer cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the consultant, or from his security deposit. The 50% of the security deposit of the consultant shall not be refunded before the expiry of twelve months after the issue of the virtual completion certificate.

52. Accidents

The consultant shall immediately on occurrence of any accident at or about the site or in connection with the execution of the work report such accident to the Employer / Consultant. The consultant shall also report such accident immediately to the competent authority whenever such report is required to be lodged by the law and take appropriate actions thereof.

53. Withholding and lien in respect of sums due from consultant

Whenever any claim or claims for payment of sum of money arises out of or under the contract or against the consultant, the Employer shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the consultant and for the purpose aforesaid, the Employer shall be entitled to withhold the security deposit, if any furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or

if no security has been taken from the consultant, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the consultant under the same contract or any other contract with the Employer pending finalization of adjudication of any such claim. It is an agreed term of the contract that the sum of money or money so withheld or retained under the lien referred to above by the Employer will be kept withheld or retained as such by the Employer till the claim arising out of or under the contract is determined by the arbitrator by the competent court, as the case may be and that the consultant will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and notified as such to the consultant. For the purpose of this clause, where the consultant is a partnership firm or a limited company, the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner / limited company as the case may be, whether in his individual capacity or otherwise.

54. Compensation during warlike situations

The work (whether fully completed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the consultant until the work has been delivered to the Employer and a certificate from Employer to the effect obtained. In the event of the work or any materials property brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the consultant shall when ordered (in writing) by the Employer / Consultant to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Employer / Consultant, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Employer. The consultant shall be paid for the damages / destruction suffered and for restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract.

In the event of the consultant having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Employer.

55. Apprentices Act provisions to be complied with

The consultant shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Employer may, in his direction, cancel the contract. The consultant shall also be liable for any pecuniary liability arising on

account of any violation by him of the provisions of the said Act.

Sd/-
Executive Engineer,
Water Supply Department,

Signature of the Tenderer/s_____

Address_____

A. The scope of the work

1. Conducting structural audit including detailed visual inspection and non-destructive test using digital rebound hammer (approx. 50 nos. per structure) in the existing storages (ESR/GSR/S&P House) of TMC located at various locations in City Limits as mentioned below:

S.N.	Locaion of Structure	Nos.	Capacity in ML	Remark
1	Indira Nagar NEW Sump Railadevi Ward Committee Area	1no – 2.5 ML each	2.5 ML	
2	RUPADEVI ESR Railadevi Ward Committee Area	1no – 0.25 ML each	0.25 ML	
3	RAMNAGAR ESR Railadevi Ward Committee Area	1no – 0.2 ML each	0.2 ML	

2. To carry out following additional non-destructive tests, as required.

Sr. No.	Additional ND Tests	Approx. No. of locations	Remarks
1	Ultrasonic Pulse Velocity Test	40 locations per structure, if required	The type of tests, numbers and the test locations will be decided in consultation with Premises Dept. depending on visual inspection and Rebound hammer test results.
2	Half Cell Potential Test for Corrosion mapping	18 locations per structure, if required	
3	Carbonation Depth Test	14 locations per structure, if required	
4	Core Test	14 locations per structure, if required	

3. Submission of detailed report, which includes

- A. The findings from detailed visual inspection
 - B. Non destructive test results
 - C. Suggested remedial measures
 - D. Bill of quantities
4. Supervision during the execution of the repair / rehabilitation works by the contractor.
 5. Issue of structural fitness certificate after completion of repair works.

B. The consultancy and incidental charges per structure for carrying out the above works shall be as per following format, which is to be filled and submitted in a separate cover :

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Sr.No.	Description
1	To carry out detailed visual inspection and digital rebound hammer test (i) Consultancy charges (ii) Incidental charges* (Maximum no. of visits)
2	To carry out additional Non Destructive Tests, if necessary a. Ultrasonic Pulse Velocity Test b. Half Cell Potential Test c. Carbonation Depth test d. Core Test
3	Consultancy charges for preparation of report which includes a. The findings from detailed visual inspection b Non destructive test results c Suggested remedial measures d Bill of Quantities
4	Incidental charges* for intermittent site visits (Maximum two per structure) during the execution of the repair works
5	To carry out site visit after completion of repair works and issue a structural fitness certificate

* Incidental charges includes charges towards hiring a vehicle for transportation, hiring labours and tools/tackles/equipments required for testing, visit charges of engineers and supporting staff, contingencies, etc.

The Consultant will have services of :

1. Licensed Structural Engineers (highest category) registered with MCGM.
2. Personnel who is Member of a Special Repair Panel formed by MCGM and several professional bodies
3. Trained and experienced surveyors (engineers)
4. Engineer to conduct Structural Audit as per the guidelines of the Indian Society of Structural Engineers

Consultant will have

- Methodology supported by exhaustive checklists and software
- Detailed report along with documentation of level wise observations
- Over 5 structural audits completed with extended consultancy for all further needs such as testing, repairs, extension etc.

SPECIAL CONDITIONS AND STANDARD SPECIFICATION:

1.0 Name of work :- “**Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane**”..

2. GENERAL.

Work shall be carried out as per the plans/drawings supplied by the Consultants/TMC from time to time. In addition, instructions to carry out certain works may also be given in writing through letters or site order book.

2.1 The rates quoted by the Consultant/s shall be all inclusive through rates. The consultant within the rates quoted prepare working plan for NDT and get the same approved from Engineer before execution. This will determine the final scope of work at the site. No leads/lifts, loading/unloading, handling, rehandling, stacking at site, toll tax, octroi, sales tax, VAT and royalty or any other charges levied or leviable by the State Government or Local Bodies shall be paid by TMC. The rates quoted shall be inclusive of all scaffolding, hoists, hoisting equipments, tools, equipments, testing equipments etc., required for the smooth execution and completion of the work.

2.2 The consultant will remove all surplus and released material from the site of work after NDT to avoid any hindrance/inconvenience to other agencies working in the adjoining area, and to the traveling public or to the train operation. The consultant will also, at the direction of the site in charge, rehandle his material in use or likely to be used in future to relocate the same to avoid any inconvenience to other agencies working in the adjoining area or to the traveling public or to the train operation without any extra cost.

In case of default, TMC may get the work done at the cost of the consultant by giving him 48 hours' notice in normal case or without any notice in case of an emergency, which is causing complaints from flat/apartment occupant, and recover such costs from any payment due to the Consultants..

2.3 In case of any dispute regarding interpretation of any of the Special Condition of Contract, decision of the City Engineer, TMC, Thane will be final and binding on the consultant/s.

3.0 Situations where NDT is an option to consider for investigation of *in-situ* concrete :

- to investigate the homogeneity of concrete mixing lack of grout in post tensioning ducts
- to determine the density and strength of concrete in a structure
- to determine the location of reinforcing bars and the cover over the bars to determine the number and size/diameter of reinforcing bars
- to determine the extent of defects such as corrosion

- to determine the location of in-built piping, ducting, etc.
- to determine whether internal defects such as voids, cracks, delamination, honeycombing, lack of bonding with reinforcing bars, etc. exist in concrete
- to determine if there is a bond between epoxy bonded steel plates and concrete members.

Permeability of Concrete is important when dealing with durability of Concrete (Concrete durability depends largely on the ease (or difficulty) with which fluids (water, carbon dioxide, oxygen) in the form of liquid or gas can migrate through the hardened concrete mass), particularly in those used for water retaining structures or watertight sub-structures. Structures exposed to harsh environmental conditions also require low porosity as well as permeability. Such adverse elements can result in degradation of reinforced concrete. Permeability test measures the ease with which liquids, ions and gasses movement can occur by flow, diffusion, and absorption. Generally the overall potential for moisture and ion ingress in concrete by these three modes is referred to as its permeability.

Rebound Hammer Test:

Rebound Hammer test is conducted to assess the relative strength and elasticity of concrete on site based on the hardness at or near its exposed surface. Depending on the age of the concrete structure and carbonation effect some specialized investigation is suggested before conducting the test. It consists essentially of a metal plunger, one end of which is held against the concrete surface while the free end is struck by a spring-loaded mass, which rebounds to a point on a graduated scale. The point is indicated by an index rider. The amount of rebound increases with increase in concrete strength for a particular concrete mix. It measures the surface hardness of concrete and provides an estimation of surface compressive strength, uniformity and quality of concrete. User expertise is low and can be readily operated by field personnel.

It gives accurate assessment of the strength of the surface layer of material. The entire structure can be tested in its 'as-built' condition. It can be very costly and time consuming as instrumentation is required to measure response. It requires careful planning and can damage structure. The member must be isolated from the rest of the structure prior to the test.

Ultrasonic Pulse Velocity (UPV) Test :

Ultrasonic Pulse Velocity Test is conducted as per IS 13111 – 1992 to assess the quality of concrete, which is suspected to have low compaction, voids (porosity), and delamination or damaged material in concrete under test. Ultrasonic Pulse Velocity Test can also be used for the following applications:

1. Estimation of Strength of Concrete
2. Establishing Homogeneity of Concrete
3. Studies on Durability of Concrete
4. Analysis of Surface Crack Depth
5. Determination of Dynamic Modulus of Elasticity

Voltage pulses are generated and transformed into wave bursts of mechanical energy by the transmitting transducer (which must be coupled to the specimen surface through a suitable medium). A receiving transducer is coupled to the specimen at a known distance to measure the interval between the transmission and reception of a pulse. There are three practical arrangements for measuring pulse velocity, namely direct, diagonal and surface techniques. The direct approach provides the greatest sensitivity and is therefore superior to the other arrangements. Determination of the variability and quality of concrete by measuring pulse velocity. Using transmission method, the extent of such defects such as voids, honeycombing, cracks and segregation may be determined. This technique is also useful when examining fire damaged concrete. Low level is required to make measurements. However, expertise is needed to interpret the results. Excellent for determining the quality and uniformity of concrete. It can rapidly survey large areas and thick members. Path lengths of 10m to 15m can be inspected with suitable equipment. Proper surface preparation is required. The work is very time consuming as it takes only point measurements. Skill is required in the analysis of results as moisture variations and presence of metal reinforcement can affect results. The interpretation of ultrasonic test results based on published graphs and tables can be misleading. It is therefore necessary that correlation with the concrete be inspected is carried out. It works on single homogenous material.

Electrochemical Half-cell Potentiometer Test:

Electrochemical Half-cell Potentiometer test provides a relatively quick method of assessing reinforcement corrosion over a wide area without the need of wholesale removal of the concrete cover. The method of half-cell potential measurements normally involves measuring the potential of an embedded reinforcing bar relative to a reference half-cell placed on the concrete surface. The half-cell is usually a copper/copper sulphate or silver/silver chloride cell but other combinations are used. The concrete functions as an electrolyte and the risk of corrosion of the reinforcement in the immediate region of the test location may be related empirically to the measured potential difference. In some circumstances, useful measurements can be obtained between two half-cells on the concrete surface. ASTM C876 - 91 gives a Standard Test Method for Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete. Quantitative measurements are made so that a structure can be monitored over a period of time and deterioration can be noted. Areas of usage include marine structures, bridge decks, abutments and so on. Used in conjunction with other tests, it has been found helpful when investigating concrete contaminated by salts.

Carbonation Test:

The method of testing consists of determining the depth of the carbonated layer on the surface of hardened concrete by means of an indicator. Carbonation of concrete occurs when the carbon dioxide, in the atmosphere in the presence of moisture, reacts with hydrated cement minerals to produce carbonates, e.g. calcium carbonate. The carbonation process is also called depassivation. Carbonation penetrates below the exposed surface of concrete extremely slowly. The significance of carbonation is that the usual protection of the reinforcing steel generally present in the concrete due

to the alkaline conditions caused by the hydrated cement paste is neutralized by carbonation. Thus, if the entire concrete covering the reinforcing steel is carbonated, corrosion of the steel would occur if moisture and oxygen could reach the steel. The time required for carbonation can be estimated knowing the concrete grade and using the equation.

Concrete Core Extraction and Testing:

In most structural investigations or diagnoses extraction of core samples is unavoidable and often essential. Cores are usually extracted by drilling using a diamond tipped core cutter cooled with water. Broken samples, for example, due to popping, spalling and delamination, are also commonly retrieved for further analysis as these samples may provide additional evidence as to the cause of distress. The selection of the locations for extraction of core samples is made after non-destructive testing which can give guidance on the most suitable sampling areas.

For instance, a cover meter can be used to ensure there are no reinforcing bars where the core is to be taken; or the ultrasonic pulse velocity test can be used to establish the areas of maximum and minimum pulse velocity that could indicate the highest and lowest compressive strength areas in the structure.

Moreover, using non-destructive tests, the number of cores that need to be taken can be reduced or minimized. This is often an advantage since coring is frequently viewed as being destructive. Also the cost of extracting cores is quite high and the damage to the concrete is severe.

The extracted cores can be subjected to a series of tests and serve multiple functions such as:

- confirming the findings of the non-destructive test
- identifying the presence of deleterious matter in the concrete ascertaining the strength of the concrete for design purposes predicting the potential durability of the concrete
- confirming the mix composition of the concrete for dispute resolution
- determining specific properties of the concrete not attainable by non-destructive methods such as intrinsic permeability.

This test is used to determine the compressive strength of a concrete core, which has usually been extracted from an existing structure. The value of compressive strength can then be used in conjunction with other measured properties to assess the condition of the concrete.

Using a masonry saw, the core is first trimmed to the correct test length, which varies upon the standard being adopted. Following trimming, the core will have its ends either ground perfectly flat, or be capped in a material to produce a smooth bearing surface.

After the prescribed curing has taken place, the specimen is then crushed to failure noting the maximum load achieved. From the values of load and dimensions, the compressive strength of the core can be calculated.

Terms and Conditions

1. Completion Period

180 days for conducting the Structural audit as per the scope and submission of detailed report of observations and recommendations along with submission of detailed tender documents.

2. Payment

The payments for the Consultancy and NDT will be made after completion of testing and submission of report along with BOQ for the repairs, maintenance and restoration works in respect of each colony as per relevant clauses elsewhere in the Bid document.

3. All the Audit reports will have to be provided in triplicate in hard as well as soft copy.

4. Since these are old structures, TMC will not be able to provide any Data, Drawings & Documents related to the buildings. All the necessary work related for job completion shall be in the scope of the Consultants.

5. All the necessary tools, tackles, instruments, material required for completion of audit shall be part of the scope of work .

6. THE ENTIRE JOB SHALL BE CARRIED OUT AS PER THE TERMS AND CONDITIONS STIPULATED IN THE TENDER AND INSTRUCTIONS OF TMC'S ENGINEER IN-CHARGE.

1. Payment terms :

Payment of work completed shall be made in stages as per the following schedule ;

For PART-A

20 % of the value of work after the Visual Inspection.

50 % of the value of work less amount already paid, after the NDT is completed.

80 % of the value of work less amount already paid after the Audit report and BOQ for rectification /restoration work are submitted.

Remaining 20 % of the value of work, after preparation of Tender Document, Evaluation of Bid.

For PART-B

As per approved Consultancy cost (%age basis) for rehabilitation works. Breakup of payment for PMC work will be linked with payment of Agency carrying out rehabilitation works.

Articles of Agreement

Articles of agreement made this _____ day of _____ 2013 between the _____ hereinafter called the EMPLOYER, which expression shall include its successors and assigns and persons for the time being of the management of the Employer of the one part and _____ hereinafter called the consultant which expression shall include his / their respective Heirs, successors, executors, administrators and assigns of the other part.

Whereas the Employer is desirous of getting _____ and has caused drawings and specifications describing the work to be done to be prepared by _____.

And whereas the tendered rates are submitted by the consultant were accepted by the Employer, on terms and conditions hereinafter agreed at:

And whereas the said drawings, the specifications and the schedule of quantities have been signed by or on behalf of the parties hereto.

And whereas the Consultant has agreed to execute, upon and subject to the conditions set forth herein and to the conditions set forth in the invitation to tender, General Instructions and Conditions of the tender, and schedule of quantities and Conditions of Contract (all contained in bid document of which are collectively hereinafter referred to as the said conditions), the works shown upon the said drawings and / or described in the said schedule of quantities at the respective rates herein set forth amounting to the sum as therein arrived at or such other sum as shall become payable there under (hereinafter referred to as 'the said contract amount').

NOW IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN THE PARTIES HERE TO FOLLOWS:

In consideration of the said Contract amount to be paid at the time and in the manner set forth in the said conditions, execute and complete the work shown upon the drawings and described in the said specifications and the schedule of quantities.

The Employer shall pay the Consultant the said Contract amount or such other sum shall become payable at the times and in the manner hereinafter specified in the said conditions.

The said Conditions and Appendix thereto shall be read and construed as forming part of this agreement, and the parties hereto shall respectively abide by, submit themselves to the said conditions and perform the agreements on their part respectively in the said conditions contained.

The term "the Architects" in the said conditions shall mean TMC's Engineers, or in the event of their ceasing to be the Architect for the purpose of this Contract such other person or persons as shall be nominated for the purpose by the Employer.

The plans, agreement and documents mentioned herein shall form the basis of this and the decision of the said architects for the time being as mentioned in the said conditions, in reference to all matters of dispute as to materials and workmanship be final and binding on both parties.

Consultant	No.of Correction	Executive Engineer
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This contract is neither a fixed lump sum contract nor a piece work contract but is a contract to carry out the work in respect of the entire buildings to be paid for according to actual measured quantities at the rates contained in the schedule of rates and probable quantities or as provided in the said conditions.

The consultant shall be responsible for the co-ordination of the work of other consultants / sub consultants etc. The respective consultants shall work harmoniously and afford reasonable facility to each other as circumstances required.

In all matters of co-ordination the Employer's decision shall be final and binding on all parties.

The employer reserves to itself the right of altering drawings and nature of the work, adding to or omitting any item of work from the contract or having portion of the same carried out through other agencies without prejudice to this contract.

Time shall be considered as the essence of this agreement and the consultant hereby agrees to commence the work soon after the site is handed over to him or from the fourteenth day of the date of issue of formal work order as provided for in the said conditions and to complete the entire work within 120 days, nevertheless to the provisions for extension of time.

All payments by the employer under this contract shall be made only at Mumbai.

Further all disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Mumbai and only courts in Mumbai shall have jurisdiction to entertain and determine the same.

The several parts of this contract have been read by us and fully understood by us.

In witness where of the parties hereto have set their respective hands the day and the year in above written _____

Signed by the said consultant.

Signed by the Employer

In the presence of

in the presence of:

Address:

Address:

Occupation:

Occupation:

SAFETY CODE

1. There shall be maintained in a readily accessible place first aid appliances including adequate supply of sterilized dressings and cotton wool.
2. An injured person shall be taken to a public hospital without loss of time, in case where they injury necessitates hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from ground.
4. No portable single ladder shall be over 8 meters in length. The width between the said rails shall not be less than 30 cm (clear) and the distance between two adjacent rungs shall not be more than 30 cm. When a ladder is used an extra mazdoor shall be engaged for holding the ladder.
5. The excavated material shall not be placed within 1.5 meters of the edge of the trench or half of the depth of trench whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.
6. Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one meter.
7. No floor, roof or other part of the structure shall be so overloaded with debris or materials as to render it unsafe.
8. Workers employed on mixing and handling material such as asphalt, cement, mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.
9. Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
10. (i) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
(ii) Suitable face masks be supplied for use by the workers when paint is applied in the forms of spray or surface having lead paint is being dry rubbed and scraped.
11. Overalls shall be supplied by the Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the periods of cessation of work.
12. Hoisting machines and Tackle used in the works, including their attachments anchorage and supports shall be in perfect condition.
13. The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

UNDERTAKING

The Executive Engineer,

I/We-----
---have read the various conditions to PQ bid attached here to and hereby agree to abide by the said conditions. I/We offer to do this work of **“Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane”** as detailed under **scope of work** in the event we are Pre-qualified for the purpose and hereby bind myself/ourselves to complete the work in all respects. We agree to the condition that our Financial Bid will be opened only if we qualify as per the stipulations in the PQ/Technical bid document.

I/We also hereby agree to abide by the General Condition of Contract and to carry out the consultancy work according to the Special Conditions of Contract and specifications for material and testing works as laid down by TMC.

Signature of the PQ bidder/s

PQ bidder/s Address with telephone Nos
(complete postal address to be given)

Dated :

APPLICATION FORM

I / We am / are desirous of participating in the PQ bid for the work of Consultancy and conducting of Structural Audit, NDT of various Structures (ESR/GSR/S&P House) of TMC in Thane, as detailed under scope of work, and hereby apply for the same. I/we give the following details for your consideration:

Sl. No.	Item	Information to be filled in by applicant
1.	Name of the Consultancy firm	
2.	Full Address	
3.	Telephone Number: Office / Residence	
	Mobile Number :	
	Fax No.	
	E-Mail address	
4.(i)	Month and year in which the firm / company was formed / incorporated in present name	
4(ii)	Number of years in the Business of Structural Audit, NDT and consultancy works (Enclose Registration certificate/Proof) – Annexure B.	
5. (i)	What is the constitution of firm viz. Sole Proprietor, Partnership, Pvt. Ltd., Public Ltd., etc.	
	(ii) Enclose copy of partnership deed, Articles of Association or Affidavit(in case of sole proprietorship as per Annexure A)	
6.	Has the applicant or any of his partners or Directors been black listed or banned in the past by any Central or State Government Dept. / Organization / PSUs?	
7. (i)	Annual Turn Over for last Three Years as per Annexure–D (enclose ITCC & Audited Balance Sheets to support figures)	Year Annual Turn-over (In Rs lakh)

Consultant |

No.of Correction

Executive Engineer

		ii) 2012-13	
		iii)2013-14	
		iii)2014-15	
(ii)	What evidence or proof is enclosed to support the amounts of yearly turnover		
(iii)	Enclose for the last three years income tax clearance certificate (ITCC)	Certificate enclosed for Assessment years	
8.	Fill up the enclosed Annexure C giving full particulars about similar works completed (i.e. work-orders in the field of Consultancy for Structural Audit of various Buildings including conducting NDT, preparation of BOQ with estimates, drawings/specifications based on NDT for Organisations / PSUs / Institutes).		
9.	Whether all documents has been submitted as per check list (Annexure-E).		
10.	Any other information the applicant might like to give.		

Signature & Seal of applicant

DECLARATION

I/We agree to notify the Executive Engineer of Thane Municipal Corporation, accepting this application, of any changes in the foregoing particulars as and when they occur and to verify and confirm these.

I / We understand and agree that the competent authority of TMC has the right as he may decide, not to issue PQ/Technical bid form in any particular case and also to suspend, remove or blacklist my / our name from TMC list of Consultants in the event of my / our submitting nonbonafide PQ/Technical bids, or for technical or other delinquency in regard to which the decision of competent authority of TMC shall be final and conclusive.

I / We certify that the particulars furnished in the enrollment forms are correct and that should it be found that I/We have given a false certificate or that if I / We fail to notify the fact of my / our subsequent amalgamation with another Consultant or firm, the Thane Municipa lCorporation may remove my / our name from the list of Consultants and any contract that I/We may be holding at the time may be rescinded.

PLACE:

DATE:

SIGNATURE & SEAL OF APPLICANT

Annexure A

AFFIDAVIT FOR SOLE PROPRIETORSHIP OF FIRM

(On Non-Judicial Stamp Paper of appropriate value in case the individual who is the sole proprietor of the firm)

I,
.....S/o.....Age.....yea
rs, occupation business R/o

..... do hereby state on oath as under:

That I am residing
in.....
..... locality of District
..... Since last years.

That I am the sole proprietor of a proprietary concern name and style as
“.....” having its office at
..... District dealing in the business of
Government’s/Private civil contracts and ancillary works attached therefor.

Hence this affidavit.

Deponent

Note: This Affidavit should be Notarised.

Annexure B

PARTICULARS OF REGISTRATION AS CONSULTANT FOR STRUCTURAL AUDIT OF BUILDING, NDT AND ALLIED WORKS

Sr. No.	Name and address of authority(ies) with whom the firm is registered	REGISTRATION DETAILS	
		Year	Is copy of letter enclosed ?
(1)	(2)	(3)	(4)

****Copy of License issued by competent authority of govt. should be enclosed.***

SIGNATURE & SEAL OF CONSULTANT

Annexure C

**LIST OF ALL STRUCTURAL AUDIT WORKS, NDT AND ALLIED WORKS COMPLETED DURING LAST FIVE YEARS
(Between April 2009 to March 2014)**

Sr. No.	Details of work contract with name of client	Value of work as per final bill(Rs.)	Date of commencement	Date of Completion	Penalty if any for delay etc	Completion certificate from client or their consultant

NOTE: To enable us to process your application, please ensure that complete present Postal Address including Pin Code and latest Telephone Numbers / Fax Numbers / E-mail Address etc. are furnished under Column Nos. 3 & 4 above and "Completion Certificate" from client / owner for each work listed above has been enclosed, bearing above details.

SIGNATURE & SEAL OF CONSULTANT

Annexure D

ANNUAL TURNOVER FOR THE LAST THREE YEARS

Sl. No.	Financial Year	Total contract amount received in Rs.	IT Certificate enclosed Yes/No	Audited Balance sheet copy enclosed Yes / No	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	2010-11				
2.	2011-12				
3.	2012-13				

SIGNATURE & SEAL OF APPLICANT

CHECKLIST FOR DOCUMENTS:

Sl. No.	Description of Enclosure	Refer item no. of form	Enclosed
1.	Partnership deed, Joint Venture or Articles of Association or Affidavit as per Annexure A enclosed	5 (ii)	Yes / No
2	Annexure B (as enclosed)	4 (ii) (particulars of registration)	Yes / No
3	Proof of turnover	7(i)	Yes / No
4	Latest I.T.C.C.	7(iii)	Yes / No
5	Annexure C (as enclosed)	8 (List of works completed during last 5 years)	Yes / No
6	Copies of work order	8 (ii)	Yes / No
7	Annexure D (as enclosed)	7 (i) (Annual Turnover details)	Yes / No

**SIGNATURE &
SEAL OF CONSULTANT**

FINANCIAL BID,
PART-A

THANE MUNICIPAL CORPORATION, THANE

FINANCIAL BID DOCUMENT

Name of work :- Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar,Ramnagar,Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane

Location of Work :- City Limits of Thane Municipal Corporation, Thane

Sr. No	Description	Quantity	Rate	Amount
1				
a	Conducting detailed survey of each storage structure by visual inspection covering <ul style="list-style-type: none"> • External faces, common areas e.g. Footing, Beams/ bracings, Columns, Slab, Container Wall, Staircase etc. • All portions to assess current state of condition, levels of deterioration, stability/durability etc. 	Lump Sum for 4 structures		
b	Conducting detailed survey of each structure by visual and physical inspection and assessing the load bearing capacity of the existing masonry/RCC walls and the foundation on which the tank are constructed (16 structures). Providing a detailed report on the strength of existing load bearing masonry / RCC walls and the foundation below the ground level for taking additional loads like flooring, wall cladding and other renovation works etc.The analysis is purely through non-destructive test and as per the latest codes and manuals.	Lump Sum for 4 structures		
2	NDT			
a	Rebound Hammer Test: Preparing the surface of RCC structural members such as beams, columns, slabs etc by chipping the plastered surface/finishing/cladding to expose the concrete, smoothing the area using carborandum stone all in terms of relevant IS code and conducting rebound hammer test all as per IS 13311-1992(Part 2) or as directed by consultant including	80		

	analysis of the test result & preparation of separate report for each building with observations and recommendations for remedial measures if any.			
b	UPV (Ultrasonic Pulse Velocity) Test: Preparing the surface of RCC structural members such as beams, columns, slabs etc. by chipping the plastered surface/finishing/cladding to expose the concrete, smoothening the area using carborandum stone all in terms of relevant IS code and conducting rebound hammer test all as per IS 13311-1992(Part 1) or as directed by consultant including analysis of the test result & preparation of separate report for each building with observations and recommendations for remedial measures if any.	80		
c	Carbonation Depth Test: Preparing the surface of RCC structural member such as beams, columns, slabs, water tank walls & slab etc by chipping the plastered surface/finishing/cladding to expose the concrete, cutting etc as per relevant code and conducting carbonation test at various depth as directed by consultant using phenolphthalein of specified concentration to assess depth of carbonation including analysis of the test result & preparation of separate report for each building with observations and recommendations for remedial measures if any.	80		
d	Half Cell Potential Test for Corrosion mapping. Preparing the structural members as directed to expose the reinforcement steel, cleaning the area with blower/wire brush and carrying out half-cell potentiometer test for measuring the level of corrosion of reinforcement steel in the RCC member including analysis of the test result & preparation of separate report for each building with observations and recommendations for remedial measures if any.	80		
e	Core Test: Deciding the location by using “ Rebar Locator/Cover Meter ” and Preparing the structural members as directed to expose the concrete, cleaning			

	the area with blower /wire brush and taking out the concrete sample with cutter and testing as per standard specification including analysis of the test result & preparation of separate report for each building with observations and recommendations for remedial measures if any.			
3	<p>Consultancy charges for preparation of structure wise structural audit report which includes</p> <p>a. The findings from detailed visual inspection as in item 1</p> <p>b Non destructive test results</p> <p>c Suggested remedial measures</p> <p>d Bill of quantities item wise & detailed specification with cost estimate for each structure</p> <p>All based on the visual inspection, NDT, assessment as per item 1 and 2.</p> <p>Preparation of Tender Document and Evaluation of Bid</p>	Lump Sum for 4 structures		
	Total Amount			

Total amount in Rupees.....

Date :

Place:

**Seal and Signature
of the Tenderer**

FINANCIAL BID,

PART-B

THANE MUNICIPAL CORPORATION, THANE

FINANCIAL BID DOCUMENT

Name of work :- Appointment of Consultant and Conducting Structural Audit, NDT of Old Storages (ESR/GSR) and Sump & Pump Houses At Indiranagar, Ramnagar, Rupadevi area of of Railadevi Ward in Thane Municipal Corporation Area, Thane

Location of Work :- City Limits of Thane Municipal Corporation, Thane

Sr. No	Description	Estimated Cost (Rs.)	Offer (% basis)
1			
a	Providing Project Management Consultancy for Rehabilitation of proposed works.	1,00,00,000/-	

(-----% above / below / at par of estimated cost)

Date :

Place:

**Seal and Signature
of the Tenderer**