STANDARD BIDDING DOCUMENT
PROCUREMENT OF CIVIL WORKS

PART-I
COMPLETE BIDDING DOCUMENT

NAME OF WORK: Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.

E-TENDER

B-II TENDER FORM
GOVERNMENT OF MAHARASHTRA

AGREEMENT NO---------------

NATIONAL COMPETITIVE BIDDING
(CIVIL WORKS)

<table>
<thead>
<tr>
<th>Name of work</th>
<th>Strengthning and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Issue Date</td>
<td>Date.28.05.2017 at 10.00 hrs</td>
</tr>
<tr>
<td>Time and date of pre-bid conference</td>
<td>Date. 06.06.2017 at 15.00 hrs, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.</td>
</tr>
<tr>
<td>Opening Date (If possible)</td>
<td>Date.25.06.2017 at 12.00 hrs Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
<tr>
<td>Officer inviting bids</td>
<td>Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
</tbody>
</table>

Contractor
No. of corrections
Executive Engineer
GOVERNMENT OF MAHARASHTRA
MAHARASHTRA MARITIME BOARD

INVITATIONS FOR BIDS (IFB)
NATIONAL COMPETITIVE BIDDING

The Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001. invites online bids for the construction of work detailed in the table.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Work</th>
<th>Approximate value of work Rs.</th>
<th>Bid Security (Rs.)</th>
<th>Cost of Document (Rs.)</th>
<th>Period of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.</td>
<td>2,48,64,470/-</td>
<td>1,24,500/-</td>
<td>2,360/-</td>
<td>12(Twelve) months (Including monsoon)</td>
</tr>
</tbody>
</table>

E-TENDER TIME SCHEDULE ( As per e-Tender GR. Dated on 12.04.2017 )

Please Note: All bid related activities (Process) will be governed by the time schedule given under Key Dates below:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activities</th>
<th>Date</th>
<th>Hour</th>
<th>Mins.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Publishing Date</td>
<td>28.05.2018</td>
<td>At</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Document Download start Date</td>
<td>28.05.2018</td>
<td>At</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Document Download End Date</td>
<td>21.06.2018</td>
<td>Up to</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>Seek clarification start Date</td>
<td>28.05.2018</td>
<td>At</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Seek clarification end Date</td>
<td>06.06.2018</td>
<td>Up to</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>Pre-Bid Meeting</td>
<td>06.06.2018</td>
<td>At</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>Bid Submission start Date</td>
<td>06.06.2018</td>
<td>At</td>
<td>16</td>
</tr>
<tr>
<td>8</td>
<td>Bid Submission closing Date</td>
<td>21.06.2018</td>
<td>Up to</td>
<td>17</td>
</tr>
<tr>
<td>9</td>
<td>Bid Opening Date</td>
<td>25.06.2018</td>
<td>At</td>
<td>12</td>
</tr>
</tbody>
</table>

*Dates mentioned here, are scheduled dates for Bid Opening Activities. Any changes in dates of opening of technical and commercial tenders shall be notified in ‘Press Notice / Corrigendum' section on the e-Tendering sub portal of the department before opening of the same.
Note:-
1. All eligible / interested Bidders are required to be enrolled on portal https://mahatenders.gov.in to participate in e-tendering.
2. Bidders should submit the document related to tender, earnest money and tender document fee under their digital signature online through payment gateway on the e tendering portal.
3. Other instructions can be seen in the tender form. All or any one of the tender may be rejected by competent authority without assigning any reason.

PROCEDURE UNDER E-TENDERING INSTRUCTION TO BIDDERS

Tender form, conditions of contract, specifications and contract drawings can be downloaded from https://mahatenders.gov.in after entering the details payment of Rs. 2,360/- (Rupees Two Thousand Three Hundred Sixty Only) should be paid online using payment gateway. The fees of tender document will be non refundable.

Further information regarding the work can be obtained from the above office. Affidavit on Rs. 100/- stamp paper in prescribed form given in Annexure I sworn before Executive Magistrate / Notary, Additional Performance Security Deposit (if required) scan copy of original should be submitted online. Bids will be opened as per the Tender Schedule, in the presence of such intending Tenderers or his / their authorized representatives who may be present at that time.

TENDERING PROCEDURE :

1.1. Blank Tender Forms.

1.1.1 Tender Forms can be downloaded from the eTendering portal of Public Works Department, Government of Maharashtra i.e. https://mahatenders.gov.in after entering the details of payment towards Tender Fees as per the Tender Schedule.

1.1.2 The tender submitted by the tenderer shall be based on the clarification, additional facility offered (if any) by the Department, and this tender shall be unconditional. Conditional tenders will be summarily REJECTED.

1.1.3 All tenderers are cautioned that tenders containing any deviation from the contractual terms and conditions, specifications or other requirements and conditional tenders will be treated as non responsive. The contractor should clearly mention in forwarding letter that his offer (in envelope No.1& 2) does not contain any condition, deviations from terms and conditions stipulated in the tender.

1.1.4 Tenderers should have valid Class II / III Digital Signature Certificate (DSC) obtained from any Certifying Authorities. In case of requirement of DSC, interested Bidders should go to https://mahatenders.gov.in and follow the procedure
mentioned in the document; Procedure for application of Digital Certificate.

1.1.5 For any assistance on the use of Electronic Tendering System, the Users may call the below

Toll Free Ph. No. 1800 30702232/7878107985-86

E-Mail: eproc.support@maharashtra.gov.in

1.2 PRE-TENDER CONFERENCE:

1.2.1 Pre-tender conference open to all prospective tenderers who have purchased tender form before the date of Pre-tender Conference, will be held at Mumbai on Dated. 06.06.2018 at 15.00 hrs Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai 400 001, Phone No. (022) 22694475 wherein prospective Tenderers will have an opportunity to obtain clarifications regarding the work and the Tender Conditions.

1.2.2 The prospective tenderers are free to ask for any additional information or clarification either in writing or orally concerning the work, and the reply to the same will be given by the Chief Engineer / Superintending Engineer / Executive Engineer, in writing and this clarification referred to as Common Set of Conditions/Deviations (C.S.D.), shall form part of tender documents and which will also be common and applicable to all tenderers. The point/points if any raised in writing and/or verbally by the contractor in pre-tender conference and not finding place in C.S.D. issued after the pre-bid conference, is/are deemed rejected. In such case the provision in NIT shall prevail. No individual correspondence shall be made thereafter with the contractor in this regard.

1.2.3 The tender submitted by the tenderer shall be based on the clarification, additional facility offered (if any) by the Department, and this tender shall be unconditional. Conditional tenders shall be summarily REJECTED.

1.2.4 All tenderers are cautioned that tenders containing any deviation from the contractual terms and conditions, specifications or other requirements and conditional tenders will be treated as non responsive. The contractor should clearly mention in forwarding letter that his offer (in envelope No. 1& 2) does not contain any conditions, deviations from terms and conditions stipulated in the tender.

1.3 Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this tender site : https://mahatenders.gov.in

(1) Bidder must register themselves on https://mahatenders.gov.in portal by clicking “Online Bidder Enrollment” and then map Digital Signature certificate.

(2) Bidder then login to the site giving user id / password chosen during registration.

(3) The e-token that is registered should be used by the bidder and should not be misused by others.

(4) The Bidders can update well in advance, the documents such as certificates, purchase order details etc., under My Documents option and these can be selected as per tender requirements and then attached along with bid documents during bid
(5) After downloading / getting the tender schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise, the bid will be rejected.

(6) If there are any clarifications, this may be obtained online through the tender site, or through the contact details. Bidder should take into account of the corrigendum published before submitting the bids online.

(7) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender schedule and they should be in PDF/xls/rar/dwf formats. If there is more than one document, they can be clubbed together.

(8) Bidder should get ready the EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission date & time for the tender.

(9) The bidder reads the terms & conditions and accepts the same to proceed further to submit the bids.

(10) The bidder has to submit the tender document online well in advance before the prescribed time to avoid any delay or problem during the submission process.

(11) After the bid submission, the acknowledgement number, given by the e-tendering system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender.

(12) The details of the Earnest Money Deposit document submitted physically to the Dept and the scanned copies furnished at the time of bid submission online should be the same otherwise the Tender will be summarily rejected.

(13) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders.

(14) The bidder may submit the bid documents either by online mode through the site (https://mahatenders.gov.in) as indicated in the tender.

(15) The tendering system will give a successful bid updating message after uploading all the bid documents submitted & then a bid summary will be shown with the bid no, date & time of submission of the bid with all other relevant details. The documents submitted by the bidders will be digitally signed using the e-token of the bidder and then submitted.

(16) The bid summary has to be printed and kept as an acknowledgement as a token of the submission of the bid. The bid summary will act as a proof of bid submission for a tender floated and will also act as an entry point to participate in the bid opening date.

(17) Bidder should log into the site well in advance for bid submission so that he submits the bid in time i.e. on or before the bid submission end time. If there is any delay,
due to other issues, bidder only is responsible.

(18) The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected.

(19) The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.

(20) All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening. Overall, the submitted tender documents become readable only after the tender opening by the authorized individual.

(21) The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.

(22) The bidders are requested to submit the bids through online etendering system to the TIA well before the bid submission end date & time (as per Server System Clock).

(23) The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) option in the browser.

(24) The bidder should upload the Technical document in .rar format single file to upload in Technical cover and then BOQ in .xls format single file to upload in Finance cover.

(25) For any other queries, the bidders are asked to contact through Mail: etender.maha@nic.in
SECTION 1 – INSTRUCTIONS TO BIDDERS (ITB)

Section – 1 : Instructions to Bidders

A. GENERAL

1. Scope of Bid
   1.1 The Employer (named in Appendix to ITB) on pages No.24 invites online bids for the constructions of works (as defined in these documents and referred to as “the works”) detailed in the table given in IFB. The bidders may submit bids for any or all of the works detailed in the table given in IFB.
   1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
   1.3 Throughout these bidding documents, the terms ‘bid’ and ‘tender’ and their derivatives (bidder/tenderer, bid/tender, bidding/tendering etc.) are synonymous.

2. Sources of Funds

3. The expenditure on this project will be met from the budget of " DPC 3051 0768 "

4. Eligible Bidders
   4.1 This invitation for Bids is open to all bidders.
   4.2 All bidders shall provide in Tender part-2 Section 2, page No.10 Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the design, specification, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation of supervision of the works, and any of its affiliates, shall not be eligible to bid.

5. Qualification of the Bidder
   5.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include programme of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.

5.2 Deleted

5.3 If the Employer has not undertaken prequalification of potential bidders, all bidders shall include the following information and documents with their bids in Section 2.

   (a) Copies of original documents defining the constitution or legal status, place of registration and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder ;
   (b) Total monetary value of construction work performed for each of the last five years ;
   (c) Experience in works of a similar nature and size for each of the last five years and details of works underway or contractually committed and clients who may be contacted for further information on those contracts ;
   (d) Major items of construction equipment proposed to carry out the Contract.
(e) Qualifications and experience of key site management and technical personnel proposed for contract;
(f) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor’s reports for the past five years;
(g) Evidence of access to line(s) of credit and availability of other financial resources facilities (10% of contract value) certified by the Bankers. (Not more than 3 months old);
(h) Undertaking that the bidder will be able to invest a minimum cash up to 25% of contract value of work during implementation of work;
(i) Authority to seek references from the Bidder’s bankers;
(j) Information regarding any litigation, current or during the last five years, in the Bidder is involved, the parties concerned and disputed amount;
(k) Proposals for subcontracting components of the Works amounting to more than 10 percent of the Bid Price (for each, the qualifications and experience of the identified sub contractor in the relevant field should be annexed); and
(l) The proposed methodology and programme of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.

4.4. Bids from Joint ventures are not acceptable.*

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4.5 QUALIFICATION CRITERIA

4.5.1 Qualification will be based on Applicant’s meeting all the following minimum pass/fail criteria regarding the Applicant’s general and particular experience, personnel and equipment capabilities, and financial position, as demonstrated by the Applicant’s response in the forms attached to the Letter of Application. Subcontractor’s experience and resources shall not be taken into account in determining the Applicant’s compliance with the qualifying criteria.

To qualify for more than one contract, the applicant must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for each contract given in the paragraphs 4.5.4, 4.5.5, 4.5.6 and 4.5.9 below.

4.5.2 Base year and escalation: - The base shall be taken as 2017-18

Following enhancement factors will be used for the cost of works executed and the financial figures to a common base value for works completed in India.

<table>
<thead>
<tr>
<th>Year before</th>
<th>Multiplying factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>1.10</td>
</tr>
<tr>
<td>Two</td>
<td>1.21</td>
</tr>
<tr>
<td>Three</td>
<td>1.33</td>
</tr>
<tr>
<td>Four</td>
<td>1.46</td>
</tr>
<tr>
<td>Five</td>
<td>1.61</td>
</tr>
</tbody>
</table>

Applicant should indicate actual figures of costs and amount for the works executed by them without accounting for the above mentioned factors.

In case the financial figures and value of completed works are in foreign currency, the above enhanced multiplying factors will not be applied. Instead, current market exchange rate (State Bank of
India BC selling rate as on the last date of submission of bid) will be applied for the purpose of conversion amount in foreign currency in Indian rupees.
4.5.3 General Experience

The applicant shall meet the following minimum criteria

(a) To qualify for award of the contract, each tenderer in his name should have achieved an Minimum financial turnover of Rs. 186,48,352.50 during last three years (FY 2014-15, 2015-16, 2016-17) at the price level of 2017-2018 information should be given in Performa. This should be duly audited by Chartered Accountant. Year in which no turnover is shown would also be considered for working out the average turnover.

(b) Satisfactorily completed as a contractor, at least one similar type of work, Construction of value Rs. 74,59,341.00 at the price level of 2017-2018.

--- Definition of Similar works ---

Construction of Road

(c) The Scan copy of Original copy of Valid GST registration certificate from Goods and Service Tax Act.

(d) Satisfactorily executed in any one year, out of last 3 yrs preceding march 2017 the following minimum quantities of work (Information to be given only in Form No. VI enclosed herewith on Page-27.

<table>
<thead>
<tr>
<th>Sr no</th>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I)</td>
<td>Providing and laying in situ / ready mix M-25 plain cement concrete of trap metal for cast in citu piers, abutment, returns, wings etc. including provision of &quot;V&quot; shaped false joints to form suitable panels on the faces to approve design with compacting by vibrating and curing complete, including plywood/steel form work centering (excluding dewatering by means of pump) and including bailling out water and curing finishing in CM 1:3 etc. complete</td>
<td>470.37</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>II</td>
<td>Supplying and Laying trap stone rubble weighing 50 to 100 Kilogram for Subarmour layer including quarrying conveying with all the leads and lifts and placing at required places in required line, level, slope and section as directed etc. complete under tidal conditions.</td>
<td>271.44</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>III)</td>
<td>Supplying and Laying trap stone rubble weighing 300 to 500 Kilogram for apron / armour layer including quarrying, conveying with all the leads, lifts, laying in required line, level, slope including necessary equipment and machinery as directed etc. complete in the tidal conditions.</td>
<td>301.45</td>
<td>Cubic Meter</td>
</tr>
</tbody>
</table>
The works may have been executed by the Applicants as prime contractor or as member of joint venture or subcontractor. As subcontractor, he should have acquired the experience of execution of all major items of works under the proposed contract. In case the project has been executed by a joint venture, weightage towards experience of the project would be given to each joint venture in proportion to their participation in the joint venture. However the certificate require consent letter for joint venture given by concerned authority or Executive Engineer shall be furnished by contractor.

Substantially completed works means those works which are at least 90% completed as on the date of submission (i.e. gross values of work done up to the last date of submission is 90% or more of the original contract price) and continuing satisfactorily.

For these, a certificate from employer shall be submitted along with application incorporating clearly the name of the work, contract value, billing amount, date of commencement of works satisfactory performance of the Contractor and any other relevant information.

### 4.5.4 Personal capabilities

The Applicant must have suitably qualified personal to fill the following positions. The Applicant will supply information on a prime candidate and alternate for each position, both of whom should meet the experience requirements specified below.

**List of Key Personnel to be deployed on Contract Work**

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Name</th>
<th>Qualification</th>
<th>Minimum post Qualification Experience in relevant field</th>
<th>No. of Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Manager</td>
<td>B.E (Civil) or higher</td>
<td>15 Years</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>QA/QC Engineer</td>
<td>B.E (Civil) or higher</td>
<td>10 years</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Sr. Engineer</td>
<td>B.E (Civil) or higher</td>
<td>5 years</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Site Supervisors</td>
<td>DCE / ITI/SSC/Exp.</td>
<td>3 Years</td>
<td>4</td>
</tr>
</tbody>
</table>

### 4.5.5 Equipment capabilities

The Applicant should own or should have assured ownership to the following key items of equipment, in full working order, and must demonstrate that, best on known commitments; they will be available for the work in proposed contract.

**List of Key Plant & Equipment to be deployed on Contract Work**

[Reference CI. 4.5 (B) (a)]

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Equipment</th>
<th>Minimum Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Batch Mix RMC Plant CP-20 with in line silo, collection cum weight belt conveyer operated cabin turbo pum water.</strong></td>
<td>Owned</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>No.</td>
<td>Equipment Description</td>
<td>Quantity</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>2.</td>
<td>VIBRATORY ROLLER and STATIC ROLLER of 8 to 10 Tonne Static Weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(The contractor must own vibratory roller and Static Roller of 8 to 10 Tonne Static Weight)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Mechanical hydraulic concrete paver finisher with 40 HP motor</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Wet Mix Plant 60 TPH</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Truck / Tipper</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Transit Mixer</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Concrete Groove cutting machine</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>Needle Vibrator 40 mm &amp; 60 mm</td>
<td>2 each</td>
</tr>
<tr>
<td>9.</td>
<td>Screed Vibrator /plate Vibrator</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Excavator/JCB / Poclain</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>D.G. Set Generator 100 KV capacity</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Air Compressor</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Water tanker 10000 liters</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>Water Pump 5 HP</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Concrete Mixer 1 bag capacity</td>
<td>2</td>
</tr>
</tbody>
</table>

Note:-
1. The tenderer shall submit commercial invoices & vehicle particulars by concern RTO in support of Plant and Machinery mentioned in clause 2.4.
2. Definite proof of owning of above machineries in the form of commercial invoice shall be treated as ownership.

4.5.6 **Financial Position**

The Applicant should demonstrate that he has access to, or has available, liquid assets (aggregate of working capital, cash in hand and uncommitted bank guarantees) and/or credit facilities of not less than 10 percent of the value of the contract/contracts applied for (construction cash-flow may be taken as 10 percent of the estimated value of the contract/contracts).

4.5.7 The audited balance sheets for the last five years should be submitted, which must demonstrate the soundness of the Applicant’s financial position, showing long-term profitability including an estimated financial projection for the next two years. If necessary, the employer will make enquiries with the applicant’s bankers.

4.5.8 **Litigation History**

The Applicant should provide accurate information on any litigation or arbitration resulting from contracts completed or under execution by him over the last five years. A consistent history of awards against the applicant or any partner of a joint venture may result in failure of the applicant.

4.5.9 **Bid Capacity**

Applicant who meets the minimum qualification criteria will be qualified only if their available bid capacity is more than the total bid value. The available bid capacity will be calculated as under:
**Assessed Available Bid capacity** = \((A \times N \times 2 - B)\),

Where,

\(A\) = Highest turnover of last five years (updated to the current price level) rate of inflation may be taken as 10 percentage per year which will taking into account the completed as well as works in progress.

\(B\) = Value at current price level of the existing commitments and ongoing works to be completed during the next 12 months, and

\(N\) = Number of years prescribed for completion of the works for which bids are invited.

4.6. **Disqualification**

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

- made misleading or false representation in the form, statements submitted; and / or
- Records of poor performance such as abandoning the works, rescinding of contract for which the reasons are attributable to the non-performance of the contractor, consistent history of litigation awarded against the Applicant or financial failure due to bankruptcy.
- The rescinding of contract of a joint venture on account of reasons other than non-performance, such as Most Experienced partner of joint venture pulling out, court directions leading to breaking up to a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the qualification of the individual partners.

4.7 **JOINT VENTURE - DELETED**

5. **One Bid per Bidder**

5.1 Each bidder shall submit only one online - bid for one package. A bidder who submits or participates in more than one Bid (other than as a sub contractor or on cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

6. **Cost of Bidding**

6.1 The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible and liable for those costs.

7. **Site Visit**

7.1 The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of Works and its surrounding and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The cost of visiting the Site shall be at the Bidder's own expense.

8. **Additional Requirements**

8.1 Bidders should provide any additional information required to fulfil the requirements of clause 4 of the Instructions to the Bidders, if applicable.

(i) **Affidavit**
(ii) **Undertaking.**
(iii) **Affidavit additional performance security must be enclosed**
B. BIDDING DOCUMENTS

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10.

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</tr>
<tr>
<td>10</td>
<td>Documents to be furnished by bidder</td>
<td>V</td>
</tr>
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</table>

8.2 Complete bidding document containing volumes - I, II, III and IV are available to the bidders on e-tendering portal [https://mahatenders.gov.in](https://mahatenders.gov.in) Documents to be furnished by the bidder in compliance to section 2 will be by him and uploaded online as “in general document” (Refer clause 12).

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9. Clarification of Bidding Documents

9.1 A prospective bidders requiring any clarification of the bidding documents may notify the Employer in writing or by Fax /email at the Employer’s address indicated in the invitation to bid before the date and time of the pre-bid meeting specified in the Tender Schedule. The Employer will respond to any request for clarification which he received, earlier than 3 days prior to the Bid due date. Copies of the Employer's response will be uploaded in “edit attachment option” of concern tender on e-tendering portal and viewable to all tenderer, including a description of the enquiry but without identifying its source.
9.2 **Pre-bid meeting**

9.2.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in NIT.

9.2.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.2.3 The bidder is requested to submit any questions in writing by fax or by e-mail to reach the Employer well before the date & time of the pre-bid meeting.

9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted by uploading on e-tender portal without delay for information to all intended bidder. Any modifications of the bidding documents listed in sub clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to clause 10 and not through the minutes of the pre-bid meeting.

9.2.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

10. **Amendment of Bidding Documents**

10.1 Before the deadline for submission of bids online, the Employer may modify the bidding documents by issuing addenda.

10.2 Any addendum thus issued shall be part of the bidding documents and shall be uploaded in “edit attachment option” of concern tender on e-tendering portal and viewable to all tenderer, including a description of the enquiry but without identifying its source. The uploading of addendum on e-tendering portal shall deemed to be acknowledgement of receipt of each addendum to the employer. The Employer will assume no responsibility for non cognizance by the bidders.

10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

10.4. **BID REJECTION CRITERIA:**

The bidders are informed about the bid rejection criteria stated as below

4.10.1 Following bids shall be categorically rejected;

10.4.1.1. Bids received after the tender closing date and time.

10.4.1.2. Bids received without EMD as specified in the tender

10.4.1.3. Following bid rejection criteria may render the bids liable for rejection with the approval of CEO, MMB.

10.4.1.4. Incomplete / misleading / ambiguous/ conditional bids in the considered opinion of MMB.

10.4.1.5. Bidders not agreeing to furnish required Security Deposit till completion of the contract.

10.4.1.6. Validity Period indicated by the bidder is shorter than as specified in the tender document.

10.4.1.7. Bidders not agreeing to furnish Performance Bank Guarantee till the completion of the contract.

10.4.1.8. Bids not meeting the qualification parameters stipulated in the tender document.

10.4.1.9. Bidders not furnishing additional security deposit in the correct form and amount.
10.4.2. Following bid rejection criteria may render the bids liable for Rejection with the approval of the tender committee.

10.4.2.1. Bidder's failure to submit sufficient or complete details for evaluation of the bids/within the given period depending on the deficiencies noticed in the drawing/technical data which shall not however conflict with validity period.

10.4.2.2. Incomplete / misleading / ambiguous bids in the considered opinion of tender committee

10.4.2.3. Bids received without pre-qualification document where required as per the tender.

10.4.2.4. Bids not meeting the pre-qualification parameters stipulated in the tender enquiry.

10.4.2.5. Wherever PVC is allowed as per Tender but the bidder(s) quoted fixed price or vise-versa

10.4.2.6. Extra Items:
Extra item of Works; if any, shall be determined supported by a rate analysis on the following basis:

- Rates derived from similar items of this contract.

**OR**

- Rates for similar items of work executed through other agencies for MMB recently.

**OR**

- Rates mutually agreed.

C. PREPARATION OF BIDS

11. Language of the Bid

11.1 All documents relating to the bid shall be in the English language.

12. Documents Comprising the Bid

12.1 The bid to be submitted by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

**Part I** shall be named "Technical Bid" and shall comprise

(i) Bid Security in the form specified in section 8
(ii) Qualification Information and supporting documents as specified in Sect. 2.
(iii) Certificates, undertakings, affidavits as specified in Section 2.
(iv) Any other information pursuant to Claus 4.2 of these instructions.
(v) Undertaking that the bid shall remain valid for the period specified in Cl 15.1.
(vi) Acceptance/ non acceptance of Dispute Review Expert proposed in Cl. 36.1.

**Part II** shall be named "Financial Bid" and shall comprise

(i) Form of Bid a specified in Section 6.
(ii) Priced Bill of Quantities for items specified in Section 7.
12.2 The bidder shall fill and upload the Technical and Financial bid in ‘edit attachment option’ and shall upload the supporting document in ‘General Document Option’ of e tendering portal and submit the bid by using his Class III Digital Signature.

12.3 Following documents, which are not submitted with the bid, will be deemed to be part of the bid.

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13 **Bid Prices.**

13.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.

13.2 The bidder shall fill rates in ‘Rate Column of BOQ Sheet’ in figures only for all items of the Works described in the Bill of Quantities. Items for which no rate is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. Corrections of any shall be made by crossing out, initialing, dating and rewriting.

13.3 All duties, taxes and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.

13.4 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract. (For contracts more than 12 month’s period).

14 **Currencies of Bid and Payment.**

The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

- The Rates of Items in schedule "B" / (BOQ) on part II of NIT are including of Taxes, Rates, Cesses and also inclusive of the livable tax in respect of sale by transfer of property in goods involved in the execution of works Contract under the provision of rule 58 of the Maharashtra Value Added Tax Act 2005 for the purpose of levy of

- The rates quoted by the Contractor shall be rates excluding sales Tax and all other taxes but shall include GST that the contractor will have to pay for the performance of this Contract.

- **GST as per Govt. of Maharashtra Finance Department, Marathi Circular No. GST-2017/ प्र. फ़. ४२ / कराधान-२ Mantralaya, Mummbai-32, Dated. 19.08.2017.**

- Provisional amount of GST @2% i.e.1% C.G.S.T. + 1% S.G.S.T. will be deducted at Source (TDS) after the enforcement of Sections 51 of Maharashtra Goods and Services Act. 2017.
15. **Bid Validity.**

15.1 Bids shall remain valid for a period not less than **75 days** after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (v) and the Form of Bid submitted by the bidder, the latter shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid except as provided in 15.3 hereinafter, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

15.3 * In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), in the event that the Employer requests and the Bidder agrees to an extension of the validity period, the contract price, if the bidder is selected for award shall be the bid price corrected as follows: The price shall be increased by the factor of **0.2%** for each week or part of a week that has elapsed from the expiration of the initial bid validity to the date of issue of letter of acceptance to the successful Bidder.

* DELETED

15.4 Bid evaluation will be based on the bid prices without taking into consideration the above correction.

15.5 **Hard copy submitting by contractor.**

Tenderer must submit the Hard Copy of online submitted copy of the Concerned Executive Engineer's Office (as specified below)

a) Documents submitted on time in Envelope No. 1 & 2 are put in separate Envelope as Envelope No.1 (Technical Bid) and Envelope No.2 (Financial Bid) respectively and sealed properly.

b) The above two sealed Envelopes No.1 and 2 shall be again put together in one common cover and sealed. The name of work, online Tender Number, Name and full address of Tenderer with Mobile Number shall be mentioned on the said common cover marked sealed. Common cover properly covers corner.

c) The above Common Cover containing Envelope No. 1 & 2 must be submit to the Concerned Executive Engineer, Maharashtra Maritime Board, Mumbai. Within 03 working days start form next day of after Closing of Bid Submission Date (During Office Hours) Only.

d) No Delay on account of any cause will be entertained for the receipt said Hard Copy.

e) If Tenderer Fails or neglect to Submit Hard Copy His On-Line offer (Tender) will be Not be considered for further tendering procedure.

16. **Bid Security**

16.1 Earnest money of minimum Rs. **615500/-** shall be paid via online using NEFT / RTGS or payment gateway mode. After Tender opening, the EMD of the unsuccessful bidder will be returned to account provided by the bidder during the bid preparation as given in challan under Beneficiary Account Number.
16.2 Earnest Money in the form of cheques or any other form except above will not be accepted.

16.3 The amount will be refunded to the unsuccessful tenderers on deciding about the acceptance or otherwise of the tender. In case of successful tenderer, it will be refunded on his paying initial Security Deposit and completing the tender documents in form B-2.

16.4 Joint Venture Not Allowed.

16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

16.6 The bid Security may be forfeited.

I/We agree that the offer shall remain open for acceptance for a minimum period of **75 days** from the date fixed for opening of envelope No. 2 (Financial Bid) and thereafter until it is withdrawn by me/us by notice in writing duly addressed to the authority opening the tenders and sent by registered post A.D. or otherwise delivered at the office of such authority. Of the sum of **Rs. 1,24,500/-** representing the earnest money is herewith forwarded. The amount of earnest money shall not bear interest and shall be liable to be forfeited to the Government, should I/We fail to (I) abide by the stipulation to keep the offer open for the period mentioned above or (II) Sign and complete the contract documents as required by the Engineer and furnish the security deposit as specified in item (d) of the memorandum contained in paragraph (1) above within the time limit laid down in clause (1) of the annexed General Conditions of contract. The amount of earnest money may be adjusted towards the security deposit or refunded to me/us if so, desired by me/us in writing, unless the same or any part thereof has been forfeited as aforesaid.

16.7 I/We have secured exemption from payment of earnest money after executing the necessary bond in favour of the Government, a true copy of which is enclosed herewith. Should any occasion for forfeiture of earnest money for this work arise due to failure on my/our part to (I) abide by the stipulations to keep the offer open for the period mentioned above or (ii) sign and complete the contract documents and furnish the security deposit as specified in item (d) of the Memorandum contained in paragraph (1) above within the time limit laid down in clause (1) of the annexed General Conditions of Contract, the amount payable by me/us may, at the option of the Engineer, be recovered out of the amount deposited in lump sum for securing exemption in so far as the same may extend in terms of the said bond and in the event of the deficiency out of any other payments which are due or payable to me/us by the Government under any other contract or transaction of any nature whatsoever or otherwise.

17. Alternative Proposals by Bidders

17.1 Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilization advance or time for completion), basic technical design as indicated in the drawing and specifications. Conditional offer or alternative offers will not be considered further in the process of tender evaluation.

18. Format and Signing of Bid

18.1 The bidder shall be required to fill and upload the Technical and Financial Bid by using his Class III Digital Signature of the person who is authorised to submit the Bid, uploaded
18.2 The documents are required to be uploaded in “Edit Attachment Option” online. The bidder is required to ensure that the size of each document does not exceed 5 MB.

18.3 In case Bidder would like to provide any Supporting Document(s) as a part of the Bid Response, the Bidder may upload such Supporting Document(s) under “General Document Option” of tender.

18.4 CASHLESS

Vide GR No. Govt. Of Maharashtra, Public Works Department, Mantralaya Nagpur No. Tender 2016/CN20/shikana/Bldg -2 dated 09/12/2016 Contractor shall submit a certificate to the effect that all the payments to the labour / staff are made in bank accounts of staff should linked to Unique Identification Number (AADHAR Card). The certification shall be submitted by the contractor within 60 days from the commencement of the contract. If the time period of contract is less than 60 days than such certificate shall be submitted within 15 days from the date of commencement of contract.

D. SUBMISSION OF BIDS

19. Submission of Bids


20. Deadline for Submission of the Bids

20.1 The complete Bids (including Technical and Financial) must be received on e-tendering portal not later than the date indicated in NIT.

20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

21.1 Any bid submitting the Bid Security and Cost of Tender Fee document in Original after deadline prescribed in NIT will not be accepted and returned. The bid (including technical and financial) will not be opened. The complete Bids (including Technical and Financial) must be received by the Employer online not later than the deadline indicated in the schedule.

22. Modification and Withdrawal of Bids

22.1 The bidder may modify or cancel their bid online only before the deadline prescribed in clause 20 i.e., Bid due date.
E. **BID OPENING AND EVALUATION**

23. **Bid Opening**

23.1 The Employer will open all the Technical Bids received of those tenderer who has submitted the Bid Security and Cost of Tender Fee document through online before the deadline prescribed in Tender Schedule, in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clause 20 and 23.2. In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.2 The Online "Technical Bid" shall be opened first. The Bid Security and Cost of Tender Fee documents uploaded online shall be verified with Original documents submitted by bidders as required as per NIT. The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the Invitation for Bid (ref. Column 5 and paragraph 3), and has not been furnished in the form specified in Clause 16, the remaining technical bid online will not be opened.

23.3 (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1.

(ii) After receipt of confirmation of the bid security, the bidder will be asked in writing/online (usually within 10 days of opening of the Technical Bid) to clarify or modify his technical bid, if necessary, with respect to any rectifiable defects.

(iii) The bidders will respond in not more than 7 days of issue of the clarification letter/online communication, which will also indicate the date, time and venue of opening of the financial Bid. (usually on the 21st day of opening of the Technical Bid)

(iv) Immediately (usually within 3 or 4 days) on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

23.4 At the time of Online opening of "Financial Bid", the names of the bidders who were found responsive in accordance with Clause 23.3 (iv) will be announced. The bids of only these bidders will be opened. The remaining bids will be rejected online. The e-tendering system shall communicate to the rejected bidders along with reasons for their rejection. The responsive Bidder's names, the Bid prices, the total amount of each bid, will be announced by the Employer at the opening.

23.5 In case bids are invited in more than one package, the order for opening of the "Financial Bid" shall be that in which they appear in the "Invitation For Bid".

23.6 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.4. result of financial bids of all the Bidders shall be made available e-tendering portal in option “tender free View”

24. **Process to be Confidential**

24.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contractor shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.
25. Clarification of Financial Bids

25.1 To assist in the examination, evaluation and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 27.

25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing/online.

25.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

26. Examination of Bids and determination of Responsiveness

26.1 During the detailed evaluation of “Technical Bids” the Employer will determine whether each Bid (a) meets the eligibility criteria defined in clause 3 and 4, (b) has been properly signed, (c) is accompanied by the required securities and, (d) is substantially responsive to the requirements of the Bidding documents. During the detailed evaluation of the “Financial Bid”, the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e. priced bill of quantities, technical specifications and drawings.

26.2 A substantially responsive “Financial Bid” is one, which conforms to all the terms, conditions and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works, (b) which limits in any substantial way, inconsistent, with the Bidding documents, the Employer’s rights or the Bidder’s obligations under the Contract, or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

26.3 If a “Financial Bid” is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors

27.1 “Financial Bids” determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

(a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and
(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

27.2 The amount stated in the “Financial Bid” will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted with the concurrence of the Bidder in the following manner:

(a) If the Bid price increases as a result of these corrections, the amount as stated in the bid will be the ‘bid price’ and the increase will be treated as rebate;
(b) If the bid price decreases as a result of the corrections, the decreased amount will be treated as the ‘bid price’.
Such adjusted bid price shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected and the Bid Security may be forfeited in accordance with Sub-Clause 16.6(b).

28. **Deleted**

29. **Evaluation and Comparison of Financial Bids**

29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.

29.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
   
   a) Making any correction for errors pursuant to Clause 27; or
   
   b) Making an appropriate adjustments for any other acceptable variations, deviations; and
   
   c) Making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub-Clause 23.6.

29.3 The Employer reserves the right to accept or reject any variation or deviation. Variations and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in Bid evaluation.

29.4 The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of contract, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

29.5 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineers estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

29.6 A bid which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.

30. **Deleted.**

**F. AWARD OF CONTRACT**

31. **Award Criteria**

31.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined.

   (i) To be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid price and

   (ii) To be within the available bid capacity adjusted to account for his bid price which is evaluated the lowest in any of the packages opened earlier than the one under consideration.
In no case the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at his evaluated bid price.

32. **Employers Right to accept any Bid and to reject any or all Bids.**

32.1 Notwithstanding Clause 31, the Employer reserves the right to accept or reject any bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer’s action.

33. **Notification of Award and Signing of Agreement**

33.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the “Letter of Acceptance”) will state the sum that the Employer will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the “Contract Price”).

33.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 34.

33.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and sent to the successful Bidder, within 28 days following the notification of award along with the Letter of Acceptance. Within 21 days of receipt, the successful Bidder will sign the Agreement and deliver it to the Employer.

33.4 Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

34. **Performance Security and Additional Performance Security :**

**Performance Security/ EMD**

(i) If the tenderer has quoted the offer below the estimated cost put to tender, the tenderer shall have to submit Additional Performance Security in the form of D.D. / F.D.R. / Bank Guarantee of any Nationalised or Scheduled Bank in favour of the Chief Executive Officer, Maharashtra Maritime Board, Mumbai, payable at Mumbai.

The scanned copy of the Demand Draft (Additional Performance Security) shall be uploaded and submitted in envelop no.2 through e-tendering process. It is mandatory to each tenderer that he shall submit sealed envelope bearing name of agency, name of work and tender notice number which contains the original D.D. / F.D.R. / Bank Guarantee (for which the photocopy has been submitted online as above) or Slip mentioning “Not Applicable” (If offer is not below the estimate cost). The envelope shall be submitted to office of the Executive Engineer within 5 working days from the last date prescribed for the receipt of tender. Also a self attested affidavit that additional performance security is enclosed in envelope No.1 (Technical envelope) If the additional performance security is not found including in Envelope No.2 ( Financial Envelope). The offer shall be treated as non responsive.
(ii) The person/persons whose tender may be accepted (hereinafter called the Contractor, which expression shall unless excluded by or repugnant to the context include his heirs, executors, administrators, and assigns) shall

(A) within 10 days (which may be extended by Superintending Engineer concerned up to 15 days if Superintending Engineer thinks fit to do so) of the receipt by him of the notification of the acceptance of his tender deposit with the Executive Engineer in cash or Government securities endorsed to the Executive Engineer (if deposited for more than 12 months) of the sum sufficient which will made up the full security deposit specified in the tender or

(B) (Permit Government at the time of making any payment to him for work done under the contract to deduct such as will amount to 4\% of all moneys so payable such deductions to be held by Government by way of security deposit. ) Provided always that in the event of the Contractor depositing a lump sum by way of security deposit as contemplated at above, then and in such case, if the sum so deposited shall not amount to 4\% percent of the total estimated cost of the work, it shall be lawful for Government at the time of making any payment to the Contractor for work done under the contract to make up the full amount of 4\% percent by deducting sufficient sum from every such payment as last aforesaid until the full amount of the security deposit is made up. All compensation or other sums of money payable by the Contractor to Government under the terms of his contract may be deducted from or paid by the sale of sufficient part of his security deposit or from the interest arising therefrom, or from any sums which may be due or may become due by Government to the Contractor under any other contract or transaction of any nature on any account whatsoever and in the event of his security deposit being reduced by reason of any such deduction or sale as aforesaid, the Contractor shall within ten days thereafter, make good in cash or Government securities endorsed as aforesaid any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit referred to, when paid in cash may, at the cost of the depositor, be converted into interest bearing securities provided that the depositor has expressly desired this in writing.
The security deposit will not be accepted in forms of insurance company bonds as per Government orders contained in No. CCM/PWD/4250 DATED 27/12/1956.

_______________________________________________

Note: This will be the same percentage as that in the tender

If the amount of the security deposit be paid in a lump sum within the period specified at (A) above is not paid the tender/contract already accepted shall be considered as cancelled and legal steps taken against the Contractor for recovery of the amounts. The amount of the security deposit lodged by a Contractor shall be refunded along with the payment of the final bill, if the date up to which the Contractor has agreed to maintain the work in good order is over. If such date is not over, only 50% amount of security deposit shall be refunded along with the payment of the final bill. The amount of security deposit retained by the Government shall be released after expiry of period up to which the Contractor has agreed to maintain the work in good order is over. In the event of the Contractor failing or neglecting to complete rectification work within the period up to which the Contractor has agreed to maintain the work in good order, then the amount of Security Deposit retained by Government shall be adjusted towards the excess cost incurred by the Department on rectification work.

**Additional Performance Security**

If the tenderer has quoted the offer below the estimated cost put to tender, the tenderer shall have to submit Additional Performance Security in the form of Demand Draft (DD) of any Nationalised or Scheduled Bank in favour of the Chief Executive Officer, Maharashtra Maritime Board, payable at Mumbai.

The scanned copy of the Demand Draft (DD) (Additional Performance Security) shall be uploaded and submitted in envelop no.2 through e-tendering process. (Page No.148) It is mandatory to each tenderer that he shall submit sealed envelope bearing name of agency, name of work and tender notice number which contains the original Demand Draft (DD) (for which the photocopy has been submitted online as above) or Slip mentioning “Not Applicable” (If offer is not below the estimate cost). The envelope shall be submitted to office of the Chief Executive Officer within 5 working days from the last date prescribed for the receipt of tender.

The amount of the (Additional Performance Security) Demand Draft (DD) shall be calculated by the tenderer in accordance with the following manner.

If the Tenderer is below the Scheduled cost more than 1% it is mandatory to upload online, the Scanned Copy of Original D.D. /B.G. in the name of The Chief Executive Officer,
Maharashtra Maritime Board, drawn on Nationalized /Scheduled Bank. D.D. should be valid for 3 months from the date of submission of the tender in ENVELOPE NO.2 against the Additional Performance Security Deposited. The Amount of D.D. /B.G. shall be as per G.R.No. 2016/2016 & Govt. Corrigendum No 2017/2017 reproduced on page No. 75-77 & Amendment Dt.17.03.2016. The Original D.D. /B.G. along with the hard copy of the tender shall be submitted in the office of the Executive Engineer within 72 Hrs. from time of bid lock of the tender. The details of performance security deposit for below tender are given in Clause No.1.5 & 1.9.B on page No. 12, 13 & 14 of this D.T.P.

3.4.1 If the tenderer has quoted below the estimated rates, the Additional Performance Security shall be paid additionally as mentioned below.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Additional Performance Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below schedule “B” rates by more than 1% but less than 10% of the estimated cost put to tender</td>
<td>1% of the estimated cost put to tender</td>
</tr>
<tr>
<td>Below by more than 10% of the estimated cost put to tender</td>
<td>1% of the estimated cost put to tender plus an amount equal to the percentage by which the offer is below 10% of the estimated cost put to tender. (e.g. if the offer is 15.31% below, the Performance Security will be 1%+(15.31-10) = 6.31% of the estimated cost put to tender.</td>
</tr>
</tbody>
</table>

3.4.2 The Demand Draft (DD) shall be valid up to 3 months from the date of submission of the tender.

3.4.3 After opening the envelope no.1, if it is found that the tenderer is not qualified for opening his envelope no.2, then his Demand Draft (DD) shall be returned within 7 working days. Also after opening envelope no.2, except the Demand Draft (DD) of 1st and 2nd lowest bidders, the Demand Draft (DD) of other bidders shall be returned within 7 working days.

3.4.4 Demand Draft (DD) of the 2nd lowest bidder shall be returned within 3 working days after issue of work order to the 1st lowest bidder.

3.4.5 In case it is found that the documents/ Demand Draft (DD) submitted by the tenderer are false or misleading, his earnest money shall be forfeited. Also the registration of the tenderer shall be suspended for the period of 1 year. Additionally legal action may be initiated against the tenderer.

3.4.6 The work order shall be given to the concerned tenderer after the clearance of the Demand Draft (DD) submitted by him.
Refund of Additional Performance Security.

3.4.7 The amount of the Additional performance security shall be refunded as per the G.R.No. Governement of Maharashtra, Public Works Department, Mantralaya, Mumbai No.BDG 2016/C.R.2/Bldg-2, Dated 1/04/2017 (i.e. after Completion of Defect Liability Period).

3.4.8 Non submission of Additional performance security or submission of less amount of the Additional Performance Security shall be liable to summarily rejection of his tender.

35. Advance Payment and Security

35.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to maximum amount, as stated in the Contract Data.

36. Dispute Review Expert

36.1 Except where otherwise specified in the contract and subject to the powers delegated to him by Government under the code, rules then in the force, the decision of the Superintending Engineer of the Circle for the time being shall be final, conclusive and binding on all parties of the contract upon all questions relating to the meaning of the specifications, designs, drawings and instruction hereinafore mentioned and as to the quality of workmanship or materials used on the work, or as to any other question, claim right, matter or things whatsoever, if any way arising out of, or relating to the contract, designs, drawings, specifications, estimates, instructions, orders, or other 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 completion or abandonment thereof.

36.2 The Contractor may within thirty days of receipt by him of any order passed by the Superintending Engineer of the Circle as aforesaid appeal against it to the Chief Engineer, concerned with the contract work or project provided that -

(a) The accepted value of the contract exceeds Rs. 10 lakhs (Rupees Ten lakhs)
(b) Amount of claim is not less than Rs. 1.00 Lakh (Rupees One Lakh).

36.3 If the Contractor is not satisfied with the order passed by the Chief Engineer as aforesaid, the Contractor may, within thirty days of receipt by him of any such order appeal against it to the concerned Secretary, Public Works Department/Irrigation Department who, if convinced that Prima-facie the Contractors claim rejected by Superintending Engineer/Chief Engineer is not frivolous and that there is some substance in the claim of the Contractor as would merit a detailed examination and decision by the Standing Committee, shall put up to the Standing Committee at Government level for suitable decision (Vide PW Circular No. CAT-1086-CR-110/Bldg.2 Dated 7.5.1986).

37. Corrupt or Fraudulent Practices

37.1 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract
with National Highways Authority of India / State PWDNH and any other agencies, if it at any time
determines that the firm has engaged in corrupt or fraudulent practices in competing for the
contractor, or in execution.

37.2 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 23.2 and Sub-Clause 59.2
of the Conditions of Contract.
**APPENDIX TO ITB**

<table>
<thead>
<tr>
<th>Clause Reference With respect to Section – I.</th>
<th>1. Name of the Employer is <strong>Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</strong></th>
<th>2. The last five years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017-2018</td>
<td>2016-2017</td>
</tr>
<tr>
<td></td>
<td>2013-2014</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The Average annual financial turnover amount is <strong>Rs 1,86,48,352.50 during last three years (FY 2014-15, 2015-16, 2016-17)</strong> at the price level of 2017-2018.</td>
<td>[Cl. 4.5.3(a)]</td>
</tr>
<tr>
<td>4.</td>
<td>Value of proposed for <strong>Satisfactorily completed as a contractor, at least one similar type of work, Construction of value Rs. 74,59,341.00 at the price level of 2017-2018</strong></td>
<td>[Cl. 4.5.3(b)]</td>
</tr>
</tbody>
</table>
### Quantity of work are:

<table>
<thead>
<tr>
<th>Sr no</th>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Excavation for roadway in earth, soil of all sorts, sand, gravel or</td>
<td>2345.99</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>soft murum including dressing section to the required grade, camber</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and side slopes and conveying the excavated materials with all lifts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>upto a lead of 50m. and spreading for embankment or stacking as</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Excavation for roadway in hard rock by wedging and chiselling or</td>
<td>1563.99</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>line drilling including dressing section to the required grade,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>camber and side slopes and conveying the excavated materials with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>all lifts upto a lead of 50m. and spreading for embankment or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>stacking as directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Conveying materials obtained from road cutting including all lifts,</td>
<td>591.10</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>laying in layers of 20cm to 30cm. breaking clods, dressing to the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>required lines, curves, grades and section, watering and compacting</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to not less than 97% of standard Proctor density for a lead of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>over 50m. to 300m. inclusive from the site of excavation to the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>site of deposition as directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Providing trap rubble stone soling 15 cm to 20 cm thick including</td>
<td>959.43</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>hand packing and compacting etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Supplying 80 mm laterite stone metal at the road side for metal</td>
<td>566.42</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>including conveying &amp; stacking etc. complete. (50 metre initial</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lead) Hand broken.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Supplying 60 mm laterite stone metal at the road side for metal</td>
<td>183.09</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>including conveying &amp; stacking etc. complete. (50 metre initial</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lead) Hand broken.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Supplying hard murum at the road site, including conveying and</td>
<td>10.00</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>stacking complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Spreading oversize 80 millimeter and size 60 millimeter laterite</td>
<td>749.51</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>stone metal including sectioning etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Spreading hard murum for side width etc. complete</td>
<td>578.880</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>Sr no</td>
<td>Item</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
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</tr>
<tr>
<td>11</td>
<td>Compacting for 60 milimeter laterite metal with power roller including necessary labour materials and artificial watering etc. complete.</td>
<td>1830.90</td>
<td>Square Meter</td>
</tr>
<tr>
<td>12</td>
<td>Compacting the hard murum side widths including laying in layers on each side with power roller including artificial watering etc. complete.</td>
<td>1740.00</td>
<td>Square Meter</td>
</tr>
<tr>
<td>13</td>
<td>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</td>
<td>18.75</td>
<td>Running Meter</td>
</tr>
<tr>
<td>14</td>
<td>Providing and constructing 75 mm. thick Modified Penetration Macadam (MPM) road surface including all materials, preparing the existing road surface, spreading 40 mm. stone metal layers 30% crusher broken metal + 70% Hand broken (by breaking rubble obtained by blasting) heating and spraying the bitumen of VG-30 grade @ 2 Kg/sqm, spreading 12 mm.size chips compacting with three wheel static roller having weight 8 to 10 MT. to achieve the desired degree of compaction as per Technical Specification Clause 506 etc. complete. Including picking of existing WBM surface.</td>
<td>1830.90</td>
<td>Square Meter</td>
</tr>
<tr>
<td>15</td>
<td>Open Graded Premix Surfacing-Providing and Laying OGC 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates premixed with bituminous binder transported to site with VTS, laid over a previously prepared surface, finished to the required grade, level, alignment, and rolling to achieve the desired compaction VG-30 Bitumen, including providing and laying seal coat sealing voids in a bituminious surface laid to the specified level and cross fall using Type A seal coat but including Providing and applying tack coat on the prepared surface heating by fames in Boiler and spraying bitumen with sprayer on Dry / Hungry B.T. surface 3 kg/10 sqm. VG-30 bulk bitumen.</td>
<td>1830.90</td>
<td>Square Meter</td>
</tr>
<tr>
<td>Sr no</td>
<td>Item</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
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<td>------------</td>
</tr>
<tr>
<td>16</td>
<td>Excavation for foundation in earth, soils of all types, sand, gravel, soft murum including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete.</td>
<td>28.26</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>17</td>
<td>Excavation for foundation in hard rock by blasting including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete.</td>
<td>9.42</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>18</td>
<td>Providing and laying in situ / ready mix cement concrete of M10 proportion with trap metal in foundation including necessary form work, compacting and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer)) with SCADA with Natural / VSI standard Artificial Sand)</td>
<td>7.57</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>19</td>
<td>Providing cast in situ / ready mix M15 grade cement concrete for head walls of CD work / retaining walls etc. including necessary form work, compaction, finishing and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer) with SCADA with Natural / VSI standard Artificial Sand, cement 4.05 bags/cumt)</td>
<td>63.05</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>20</td>
<td>Payment of Royalty charges for supply of material</td>
<td>2415.39</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>21</td>
<td>Carry out Quality control tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Sieve analysis</td>
<td>3.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>2) Crushing Value Water Absorption &amp; Specific Gravity</td>
<td>2.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>3) Penetration Softening point Flash &amp; Fire point, Specific Gravity</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>4) Water Absorption Impact &amp; crushing value</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>5) Abrasion Value.</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>6) Flakiness &amp; Elongation Index</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>7) Stripping Value.</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>8) Extraction for Carpet</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>9) Compressive strength</td>
<td>2.00</td>
<td>Test</td>
</tr>
<tr>
<td>Sr no</td>
<td>Item</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
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<td>--------------</td>
</tr>
<tr>
<td>22</td>
<td>Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 m. beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete. (Lift upto 1.5 m.)</td>
<td>1692.76</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>23</td>
<td>Excavation for foundation in Hard rock by chiselling, wedging, line drilling, etc. including trimming and levelling the bed, removing the excavated material up to a distance of 50 metres beyond the building area stacking as directed, dewatering and back filling with available earth/ murum watering, ramming etc. complete. (Lift upto 1.5 m).</td>
<td>612.63</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>24</td>
<td>Providing trap rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete.</td>
<td>284.78</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>25</td>
<td>Providing and laying Cast in situ/Ready Mix cement concrete in M15 of trap metal for bed blocks, foundation blocks and such other items including bailing out water, plywood/steel formwork, laying/ pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.), with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With natural sand/V.S.I. quality Artificial Sand</td>
<td>152.93</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>26</td>
<td>Providing and laying in situ / ready mix M-25 plain cement concrete of trap metal for cast in situ piers, abutment, returns, wings etc. including provision of &quot;V&quot; shaped false joints to</td>
<td>1567.90</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>Sr no</td>
<td>Item</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>27</td>
<td>Providing weep holes in brick masonry/plain/reinforced concrete abutment, wing wall/return wall with 100mm diameter AC pipe extending through the full width of the structure with slope of 1V: 20H towards drawing face as per drawings and technical specifications etc. complete.</td>
<td>692.58</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>28</td>
<td>Back filling behind abutment, wing wall and return wall as per drawings and technical specifications etc. complete. (by granular material)</td>
<td>783.00</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>29</td>
<td>Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 cm to 20 cm including watering and compaction etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a only Labour rate</td>
<td>612.63</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td></td>
<td>b only Completed rate</td>
<td>561.87</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>30</td>
<td>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</td>
<td>60.00</td>
<td>Running Meter</td>
</tr>
<tr>
<td>31</td>
<td>Providing and fixing in position TMT - FE - 500 bar reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etc. as per detailed designs, drawings and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.</td>
<td>2.846</td>
<td>Metric Tone</td>
</tr>
<tr>
<td>32</td>
<td>Supplying and Laying trap stone rubble weighing 50 to 100 Kilogramme for Subarmour layer including quarrying conveying with all the leads and lifts and placing at required places in required line, level, slope and section as directed etc. complete under tidal conditions.</td>
<td>904.80</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>Sr no</td>
<td>Item</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>33</td>
<td>Supplying and Laying trap stone rubble weighing 300 to 500 Kilogramme for apron / armour layer including quarrying, conveying with all the leads, lifts, laying in required line, level, slope including necessary equipment and machinery as directed etc. complete in the tidal conditions</td>
<td>1004.85</td>
<td>Cubic Meter</td>
</tr>
<tr>
<td>34</td>
<td>Carry out Quality control tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Concrete Mix design (With all tests on basic materials)</td>
<td>1.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>b) compressive strength of cement concrete tests</td>
<td>49.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>c) Crushing value / Compressive strength, Water Absorption &amp; Specific Gravity</td>
<td>2.00</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>d) Steel Bar Testing (Above 16 mm Set of 3 bars) (Tensile strength, % elongation, Yield stress, weight per meter, Bend /Rebend test, proof stress)</td>
<td>1.00</td>
<td>Test</td>
</tr>
</tbody>
</table>

6. Liquid assets and/or availability of credit facilities is Rs. ________ (Rupees __________ only) [Cl.4.5B©]

7. Price level of financial year 2017-18 [Cl. 4.5]

8. The Pre-bid meeting at Date. 06.06.2018 at 15.00 hrs, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001. [Cl. 9.2.1]

9. The technical bid will be opened online at the Office of the Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001 on dt 05/12/2017 at 12.05 Hours. (If Possible) [Cl. .19.2(a)]

10. Address of the Employer Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001 [Cl. .19.2(b)]

11. Identification:
Bid for -
Bid Reference : No. __________
Do not open before 25/06/2018 up to 12.00 hours

12. The bid should be submitted latest by 21.06.2018 on or before 17.00 hours. [Cl. 20.1(a)]
13. The Financial bid will be opened after technical scrutiny at place Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400001. [Cl.23.1]

14. The Demand Draft (DD) of any Nationalised or Scheduled Bank in favour of the Chief Executive Officer, Maharashtra Maritime Board. [Cl.34.1]

15. The name of Dispute Review Expert is (to be notified later) [Cl.36.1]

16. Escalation factors (for the cost of works executed and financial figure to a common base value for works completed)

<table>
<thead>
<tr>
<th>Year before</th>
<th>Multiply factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>1.10</td>
</tr>
<tr>
<td>Two</td>
<td>1.21</td>
</tr>
<tr>
<td>Three</td>
<td>1.33</td>
</tr>
<tr>
<td>Four</td>
<td>1.46</td>
</tr>
<tr>
<td>Five</td>
<td>1.61</td>
</tr>
</tbody>
</table>
SECTION – 2

QUALIFICATION INFORMATION

The information to be filled in by the bidder in the following pages will be used for purposes of post qualification as provided for in clause 4 of the Instructions to bidders. This information will not be incorporated in the contract.

1. For Individual Bidders

1.1 Constitution or legal status of Bidder

(Attach Copy)

Place of registration: ____________________________
Principal place of business: ____________________________
Power of attorney of signatory of bid

(Attach)

1.2 Total value of civil Engineering

1.3 Construction work performed in the last three years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of Contract (Rs. Crore)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td></td>
</tr>
<tr>
<td>2015-2016</td>
<td></td>
</tr>
<tr>
<td>2014-2015</td>
<td></td>
</tr>
</tbody>
</table>

(Rupees in Million)

1.3.1 Work performed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided the Sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last Three years.**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Name of the Employer</th>
<th>Description of work</th>
<th>Contract No.</th>
<th>Value of Contract (Rs. Crore)</th>
<th>Date of Issue of work order</th>
<th>Stipulated period of completion</th>
<th>Actual date of completion *</th>
<th>Remarks explaining reasons for delay &amp; work completed</th>
</tr>
</thead>
</table>

* Attach certificate(s) from the Engineer(s)-in-charge.

** Immediately preceding the financial year in which bid are received.

β Attach certificate(s) from Chartered Accountant.
# 1.3.2  Quantities of work executed as prime contractor, be considered provided in the bid
document, provided further that other qualification criteria are satisfied (in the same name and
style) in the last three years.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of the work</th>
<th>Name of the Employer*</th>
<th>Quantity of work performed (Cum) &amp; Remarks</th>
<th>Remarks* (indicate Ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.4  Information on Bid capacity (works for which bids have been submitted and works which are
yet to be completed) as on the date of this bid.

(A) **Existing commitments and on-going works:**

<table>
<thead>
<tr>
<th>Description of work</th>
<th>place &amp; State</th>
<th>Contract No.</th>
<th>Name &amp; Address of employer</th>
<th>Value of Contract (Rs. Cr.)</th>
<th>stipulated period of completion</th>
<th>Value of works* remaining to be completed (Rs. Cr.)</th>
<th>Anticipated date of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

* Attach certificate(s) from the Engineer(s)-in-charge.

@ The item of works for which data is requested should tally with that specified in ITB clause 4.5A(C).

** Immediately preceding the financial year in which bid are received.

# Deleted.
1.5 Availability of key items of Contractor’s Plant & Equipment essential for carrying out the Works [Ref. Clause 4.4.5]. The Bidder should list all the information requested below. Refer also to Sub-Clause 4.3(d) of the Instructions to Bidders.

<table>
<thead>
<tr>
<th>Item of Plant &amp; Equipment</th>
<th>Requirement</th>
<th>Availability Proposal</th>
<th>Remark (from whom to be purchased)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Capacity</td>
<td>Owned</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.6 Qualification and experience of key personnel required for administration and execution of the contract [Ref. 4.5.5]. Attach biographical data. Refer also to Sub-Clause 4.3 (e) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Qualification</th>
<th>Year of Experience (General)</th>
<th>Year of Experience in the proposed position.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity Surveyor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil &amp; Material Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design/Survey Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Assistant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.7 Proposed Sub-Contracts and firms involved [Refer ITB Clause 4.3 (K)]

<table>
<thead>
<tr>
<th>Sanctions of the works</th>
<th>Value of Sub-Contract</th>
<th>Sub-Contract (Name &amp; Address)</th>
<th>Experience in similar work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.8 Financial reports for the last Three years: balance sheets, profit & loss statements, auditor’s reports (in case of companies/corporation) etc. List them below and attach copies.

1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand. Lines of credit etc. List them below and attach copies of support documents.

1.10 Name, address and telephone, telex and fax numbers of the bidder’s bankers who may provide reference if contacted by the Employer.

1.11 Information on litigation history in which the bidder is involved.

<table>
<thead>
<tr>
<th>Other party (ies)</th>
<th>Employer</th>
<th>Cause of Dispute</th>
<th>Amount involved</th>
<th>Remarks showing present status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.12 Statement compliance under the requirements of Sub Clause 3.2of the instructions to Bidders. (Name of Consultant engaged for project preparation is **----------------------------------------------
---------------------------------------------------------------------------------------------------------------------
--------

1.13 Proposed work method and schedule. The bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the bidding Documents. [Refer ITB Clause 4.1 & 4.3(1)]

1.14 Programme

1.15 Quality Assurance Programme

2 Deleted

3 Additional Requirements

3.1 Bidders should provide any additional information required to fulfil the requirements of clause 4 of the Instructions to the Bidders, if applicable.

   (iv) Affidavit

   (v) Undertaking.

   (vi) **Affidavit additional performance security must be enclosed.**
SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

BANK CERTIFICATE

This is to certify that M/s. ____________________________ is a reputed company with a good financial standing.

If the contract for the work, namely ____________________________ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs ________________________ to meet their working capital requirements for executing the above contract during the contract period.

______________________________________________
(Signature)
Name of Bank
Senior Bank Manager
Address of the Bank
AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s. __________________________ have not abandoned any work on Maharashtra Maritime Board / Public Work Department nor any contract awarded to us for such works have not been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorise(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understand and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department / Project implementing agency.

____________________(Signed by Authorised Officer of the Firm)

____________________
Title of Officer

____________________
Name of Firm

____________________
DATE
UNDERTAKING

I, the undersigned, do hereby undertake that our firm M/s. ____________________________ would invest minimum cash up to 25% of the value of work during implementation of the Contract.

________________________
(Signed by Authorised Officer of the Firm)

________________________
Title of Officer

________________________
Name of Firm

________________________
DATE
SECTION – 3

CONDITIONS OF CONTRACT
CONDITIONS OF CONTRACT

A.GENERAL

1. Definitions

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

The Adjudicator (Synonymous with Dispute Review Expert) is the person appointed jointly by the Contractor to resolve disputes in the first instance, as provided for in clauses 24. The name of the Adjudicator is defined in the Contract Data.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 44 hereunder.

The Completion Date is the date of completion of the Works as certified by the Engineer in accordance with Sub Clause 55.1.

The Contract is the contract between the Employer and the Contractor to execute, complete and maintain the works. It consists of the documents listed in Clause 2.3 below.

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

The Contractor is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The Contractor's Bid is the completed Bidding document submitted by the Contractor to the Employer and includes Technical and Financial bids.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Day are calendar days; months are calendar months.

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

A Defects Liability Period is the period named in the Contract Data and calculated from the Completion Date.

The Employer is the party who will employ the Contractor to carry out the Works.

The Engineer is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing the valuing Variations to the Contract, awarding extensions of time and valuing the Compensation Events.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.
The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The intended Completion Date may be revised only by the Engineer by issuing an extension of time.

**Materials** are all supplies, including consumables, used by the contractor for incorporation in the Works.

**Plant** is any integral part of the Works which is to have a mechanical, electrical, electronic or chemical or biological function.

The **Site** is the area defined as such in the Contract Data.

**Site Investigation Reports** are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

**Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.

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

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

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

A **variation** is an instruction given by the Engineer, which varies the Works.

The **Works** are what the Contract requires the Contractor to construct, install and turn over to the Employer, as defined in the Contract Data.

### 2. Interpretation

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

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

2.3 The documents forming the Contract shall be interpreted in the following order of priority:

1. Agreement
2. Letter of Acceptance, notice to proceed with the works.
3. Contractor's Bid
4. Contract Data
5. Conditions of Contract including Special Conditions of Contract
6. Specifications
7. Drawings
8. Bill of Quantities and
9. Any other document listed in the Contract Data as forming part of Contract.
3. **Language and Law**

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4. **Engineer's Decisions**

4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. **Delegation**

5.1 The Engineer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. **Communications**

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of India Contract Act).

7. **Sub-Contracting**

7.1 The Contractor may sub-contract any portion of work, up to a limit specified in Contract Data, with the approval of the Engineer but may not assign the Contract without the approval of the Employer in writing. Sub-contracting does not alter the Contractor's obligations.

8. **Other Contractors**

8.1 The Contractor shall co-operate and share the site with other contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractors. The Contractor shall as referred to in Contract Data; also provide facilities and services for them as described in the Schedule. The employer may modify the schedule of other contractors and shall notify the contractor of any such modification.

9. **Personnel**

9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

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

10. **Employer's and Contractor's Risks**

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

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

12. Contractor's Risks

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

13. Insurance

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

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

13.2 (Contractor shall take out necessary Insurance Policy / Policies (viz. Contractors' All Risks Insurance Policy, Errection All Risks Insurance Policy etc. as decided by the Directorate of Insurance) so as to provide adequate insurance cover for execution of the awarded contract work for total contract value and complete contract period compulsorily from the "Directorate of Insurance, Maharashtra State, Mumbai" only. Its postal address for correspondence is "264, MHADA, First floor, Opp. Kalanagar, Bandra (E), Mumbai-400051". (Telephone Number 26590403 / 26590690 and Fax Number 26592461 / 26590403). Similarly all workmen's appointed to complete the contract work are required to insure under workmen's compensation Insurance Policy, Insurance Policy / Policies taken out from any Insurance Company, the same will not be accepted and the amount of premium calculated by the Government Insurance Fund will be recovered directly from the amount payable to the contractor for the executed contract work and paid to the Directorate of Insurance Fund, Maharashtra State, Mumbai. The Director of Insurance reserves the right to distribute the risks of insurance among the other insurers. (As per revised circulate issued by Dy. Directorate of Insurance Maharashtra State vide letter No. प्राधिकृत-२३१०/सा.जू.वि./विमा.जसूली/अभि-२/ dated 8.9.2010 below mentioned percentage for insurance of contract work shall be added in the recapitulation sheet while framing the estimate as it is not considered in the D.S.R. while arriving at rates and the amount incurred by contractors for insurance of work shall be reimbursed on production of documentary evidence and after checking

a) Work value upto Rs. 25.00 lakhs - 0.50%
   b) Work value above Rs. 25.00 lakhs = 1.00%.)

13.3 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
13.4 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

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

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

13.7 CESS ON BUILDING & CONSTRUCTION LABOUR WELFARE
An amount of equal to one percent on amount of tendered amount shall be deducted from the payment of contractor as a cess on building & construction labour welfare. The deducted amount shall be remitted into account number 00422010000153 in the Bank of India of Chairman, Maharashtra Building & Other construction labour welfare circle, Mumbai.

14. Site Investigation reports
14.1 The contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.

15. Queries about the Contract Data
15.1 The Engineer will clarify queries on the Contract Data.

16. Contractor to Construct the Works
16.1 The Contractor shall construct and install the Works in accordance with the Specification and Drawings.

17. The Works to be completed by the Intended Completion Date
17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

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

18.2 The Contractor shall be responsible for design of Temporary Works.

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

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

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

19. Safety
19.1 The Contractor shall be responsible for the safety of all activities on the Site.
20. Discoveries

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

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities.

22. Access to the Site

22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured/fabricated/assembled for the works.

23. Instructions

23.1 The contractor shall carry out all instructions of the Engineer pertaining to works which comply with the applicable laws where the Site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Employer, if so required by the Employer.

24. Disputes

24.1 Except where otherwise specified in the contract and subject to the powers delegated to him by Government under the code, rules then in the force, the decision of the Superintending Engineer of the Circle for the time being shall be final, conclusive and binding on all parties of the contract upon all questions relating to the meaning of the specifications, designs, drawings and instruction hereinbefore mentioned and as to the quality of workmanship or materials used on the work, or as to any other question, claim right, matter or things whatsoever, if any way arising out of, or relating to the contract, designs, drawings, specifications, estimates, instructions, orders, or other 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 completion or abandonment thereof.

24.2 The Contractor may within thirty days of receipt by him of any order passed by the Superintending Engineer of the Circle as aforesaid appeal against it to the Chief Engineer, concerned with the Contract work or project provided that—
(a) The accepted value of the contract exceeds Rs. 10 lakhs (Rupees Ten lakhs)
(b) Amount of claim is not less than Rs. 1.00 Lakh (Rupees One Lakh).

24.3 If the Contractor is not satisfied with the order passed by the Chief Engineer as aforesaid, the Contractor may, within thirty days of receipt by him of any such order appeal against it to the concerned Secretary, Public Works Department/Irrigation Department who, if convinced that Prima facie the Contractor's claim rejected by Superintending Engineer/Chief Engineer is not
frivolous and that there is some substance in the claim of the Contractor as would merit a detailed examination and decision by the Standing Committee, shall put up to the Standing Committee at Government level for suitable decision (Vide PW Circular No. CAT-1086 CR-110/Bldg.2 Dated 7.5.1986).

25. Procedure for Disputes
25.1 The Dispute Review Expert (Board)* shall give a decision in writing within 28 days of receipt of a notification of a dispute.
25.2 The Dispute Review Expert (Board)* shall be paid daily at the rate specified in the Contract Data together with reimbursable expenses of the types specified in the Contract Data and the cost shall be divided equally between the Employer and the Contractor, whatever decision is reached by the Dispute Review Expert. Either party may give notice to the other to refer a decision of the Dispute Review Expert to an Arbitrator within 28 days of the Dispute Review Expert’s written decision. If neither party refers the dispute to arbitration within the next 28 days, the Dispute Review Expert decision will be final and binding.
25.3 The arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

26. Replacement of Dispute Review Expert
26.1 Should the Dispute Review Expert resign or die, or should the Employer and the Contractor agree that the Dispute Review Expert is not fulfilling his functions in accordance with the provisions of the Contract, a new Dispute Review Expert will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and the Contractor, within 30 days, the Dispute Review Expert shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.

B. TIME CONTROL

27. Programme
27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements, order and timing for all the activities in the Works along with monthly cash flow forecast.
27.2 An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
27.3 The contractor shall submit to the Engineer, for approval, an updated Programme at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.
27.4 The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

* Dispute Review Expert to be provided for works costing up to Rs. 50 Crores. Dispute Review Board of three members (One from Employer, One from Contractor and One to be nominated by
IRC Council and agreed by the representative members of Employer and Contractor) for works costing more than Rs. 50 crores.

28. **Extension of the Intended Completion Date**

28.1 The Engineer shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.

28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 35 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to co-operate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Employer his decision. The Employer shall in not more than 21 days communicate to the Engineer the acceptance or otherwise of the Engineer's decision. If the Employer fails to give his acceptance, the Engineer shall not grant the extension and the contractor may refer the matter to the Dispute Review Expert under Clause 24.1

29. **Deleted**

30. **Delays Ordered by the Engineer**

30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

31. **Management Meetings**

31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

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

32. **Early Warning**

32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall co-operate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.
C. QUALITY CONTROL

33. Identifying Defects
33.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking neither shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

34. Tests
34.1 If the Engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

35. Correction of Defects
35.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

36. Uncorrected Defects
36.1 If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. COST CONTROL

37. Bill of Quantities
37.1 The Bill of Quantities shall contain items for the construction, installation, testing and commissioning work to be done by the Contractor.

37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

38. Changes in the Quantities
38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent provided the change exceeds 1% of initial Contract Price, the Engineer shall adjust the rate to allow for the change, duly considering.

   (a) Justification for rate adjustment as furnished by the contractor.

   (b) Economics resulting from increase in quantities by way of reduced plant, equipment and overhead costs.

   (c) Entitlement of the contractor to compensation events where such events are caused by any additional work.
38.2 The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the Prior approval of the Employer.

38.3 If requested by the Engineer, the Contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

39. Variations
39.1 All Variations shall be included in updated Programmers produced by the Contractor.

40. Payments for Variations
40.1 The Contractor shall provide the Engineer with a quotation (with breakdown of unit rates) for carrying out the Variation when requested to do so by the Engineer. The Engineer shall assess the quotation, which shall be given within seven days of the request or within any longer period stated by the Engineer and before the variation is ordered.

40.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Engineer, the quantity of work above the limit stated in Sub Clause 38.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work.

40.3 If the Contractor's quotation is unreasonable, the Engineer may order the Variations and make a change to the Contract Price which shall be based on Engineer's own forecast of the effects of the Variation on the Contractor's costs.

40.4 If the Engineer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

40.5 The Contractor shall not be entitled to additional payment for costs which could have been avoided by giving early warning.

41. Cash Flow Forecasts
41.1 When the Programme is updated, the contractor is to provide the Engineer with an updated cash flow forecast.

42. Payment Certificates
42.1 The Contractor shall submit to the Engineer monthly statements of the estimate value of the work completed less the cumulative amount certified previously.

42.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 51(3) of the Contract Data (Secured Advance)

42.3 The value of work executed shall be determined by the Engineer.
42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

42.5 The value of work executed shall include the valuation of Variations and Compensation Events.

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

43. Payments

43.1 Payments shall be adjusted for deductions for other recoveries in terms of the contract and taxes at source, as applicable under the law. Contractors the amount certified by Engineer as per availability of funds and no interest shall be payable in case of any delayed payment.

43.2 If an amount certified is increased in a later certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

43.3 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

44. Compensation Events

44.1 The following are Compensation Events unless they are caused by the Contractor.

(a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.

(b) The Employer modifies the schedule of other contractors in a way which affects the work of the contractor under the contract.

(c) The Engineer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.

(d) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.

(e) The Engineer does not approve of a sub contract to be let, within 15 days.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of Letter of Acceptance from the information issued to Bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the site.

(g) The Engineer gives an instruction for dealing with an unforeseen condition, cause by the Employer, or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The advance payment is delayed, beyond 28 days after receipt of application and bank guarantee.

(j) The effect on the Contractor of any of the Employer's Risks.

(k) The Engineer unreasonably delays issuing a Certificate of Completion.
(l) Other Compensation Events listed in the Contract Data or mentioned in the Contract.

44.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date is extended. The Engineer shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it is to be assessed by the Engineer and the Contract Price shall be adjusted accordingly. If the contractors forecast deemed unreasonable, the Engineer shall adjust the Contract Price based on Engineer's own forecast. The Engineer will assume that the Contractor will react competently and promptly to the event.

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

45. **Tax**

45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales and other taxes that the Contractor will have to pay for performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

46. **Currencies**

46.1 All payments shall be made in Indian Rupees.

47. **Price Adjustment**

47.1 Contract Price shall be adjusted for increase or decrease in rates & price of labour, materials, fuels & lubricants in accordance with the following principles & procedures and as per formula given in the contract data:

- a) The price adjustment shall apply for the work done from the start date given in the contract data not apply to the work carried out beyond the stipulated time for reasons attributed to the contractor up to end of the initial intended completion date or extensions granted by the Engineer and shall

- b) The price adjustment shall be determined during each month from the formula given in the contract data.

- c) Following expressions and meanings are assigned to the work done during each month:

\[
R = \text{Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month. It will exclude value for works executed under variations for which price adjustments will be worked separately based on the terms mutually agreed.}
\]

47.2 To the extent that full compensations for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rate and prices included in the contract shall be deemed to include amounts to cover the contingencies of such other rise or fall in the costs.
48. **Retention**

48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works half the total amount retained is repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

48.3 On completion of the whole works, the contractor may substitute retention money with an “on demand” Bank guarantee.

49. **Liquidated Damages**

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor’s liabilities.

49.2 If the intended completion date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment calculated from the date of payment to the date of repayment at the rates specified in Sub-Clause 43.1.

49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the contractor shall pay to the employer the relevant slum stated in the Contract Data as liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data. The employer may, without prejudice to any other method of recovery deduct the amount of such damages from any monies due or to become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from his obligation to complete the works on from any other of his obligations and liabilities under the contract.

49.4 If, before the Time for completion of the whole of the works, or, if applicable, any section, a Taking-Over Certificate has been issued for any part of the Works or of a section, the liquidated damages for delay in completion of the remainder of the works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit there of.

50. **Bonus**

50.1 If the contractor achieves completion of the whole of the works prior to the Intended completion date prescribed in Contract Data the Employer shall pay to the Contractor a sum stated in Contract Data as bonus for every completed month which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 17.
For the purpose of calculating bonus payments, the time given in the Bid for completion of the whole of the works is fixed and unless otherwise agreed, no adjustments of the time by reason of granting an extension of time pursuant to Clause 28 or any other clause of these conditions will be allowed. Any period falling short of a complete month shall be ignored for the purpose of computing the period relevant for the payment of bonus.

51. **Advance Payment**

51.1 The Employer shall make advance payment (not to be paid in less than two installments except in special circumstances for which the reasons to be recorded in writing) to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to be at least 110% of the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. The mobilization advance would be deemed as interest-bearing advance at an interest rate of 10% to be compounded quarterly.

51.2 The Contractor is to use the advance payment only to pay for Equipment, Plant and Mobilization expenses required specifically for execution of the works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Engineer.

51.3 The Advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, variations, price adjustments, compensation events, or liquidated damages.

51.4 **Secured Advance**

The Engineer shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the Contract Data.

52. **Securities**

52.1 The Performance Security (including additional security for unbalanced bids) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer and denominated in Indian Rupees. The Performance Security shall be valid until a date 28 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.

53. **Deleted**

54. **Cost of Repairs**

54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the contractor at the Contractor’s cost if the loss or damage arises from the contractor’s acts or omissions.
E. FINISHING THE CONTRACT

55. Completion

55.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the work is completed.

56. Taking Over

56.1 The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

57. Final Account

57.1 The Contractor shall supply to the Engineer a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor’s account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor’s revised account.

58. Operating and Maintenance Manuals

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

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

59. Termination

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

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

(a) The contractor stops work for 28 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer.

(b) The Engineer instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 28 days.

(c) The Employer or contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(d) A payment certified by the Engineer is not paid by the Employer to the Contractor within 56 days of the date of the Engineer’s Certificate.

(e) The Engineer gives Notice that failure to correct particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer.
(f) The Contractor does not maintain a security, which is required.

(g) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract Data; and

(h) If the Contractor in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract

For the purpose of this paragraph: “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract executing. “Fraudulent Practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (Prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition”.

59.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub-Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.

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

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

60. Payment upon Termination

60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payments received upon the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

60.2 If the contract is terminated at the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a Certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of Equipment, repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s Costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

61. Property

61.1 All materials on the site, Plant, Equipments, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor’s default.

62. Releases from Performance

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

1. LABOUR
   The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment housing, feeding and transport. The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the site and such other information as the Engineer may require.

2. COMPLIANCE WITH LABOUR REGULATIONS
   During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the state or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/Regulations including amendments, if any, on the part of the Contractor, the Engineer/Employer shall have the right to deduct any money due to the Contractor, including his amount of performance security. The Employer / Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

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

   SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

   a) Workmen Compensation Act 1923: - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

   b) Payment of Gratuity Act 1972: - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

   c) Employees P.F. and Miscellaneous Provision Act 1952 :- The Act provides for monthly contributions by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:

      (i) Pension or family pension on retirement or death, as the case may be.
      (ii) Deposit linked insurance on the death in harness of the worker.
      (iii) Payment of P.F. accumulation on retirement/death etc.
d) **Maternity Benefit Act 1951** :- The Act provides for leave and some other benefits to Women employees in case of confinement or miscarriage etc.

e) **Contract Labour (Regulation & Abolition) Act 1970** :- The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or contractor of Principal Employer, if they employ 20 or more contract labour.

f) **Minimum Wages Act 1948** :- The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of buildings, Roads, Runways is scheduled employment.

g) **Payment of Wages Act 1936** :- It lays down as to by what date the wages are to be paid when it will be paid and what deductions can be made from the wages of the workers.

h) **Equal Remuneration Act 1979** :- The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

i) **Payment of Bonus Act 1965** :- The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs. 2500/- per month or above up to Rs. 3500/- per month shall be worked out by taking wages as Rs. 2500/- per month only. The Act does not apply to certain establishments. The newly set up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

j) **Industrial Disputers Act 1947** :- The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

k) **Industrial Employment (Standing Orders) Act 1946** :- It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

l) **Trade Unions Act 1926** :- The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

m) **Child Labour :- Prohibition and Regulation) Act 1986** :- The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.

n) **Inter-State Migrating Workmen’s (Regulation of Employment & Conditions of Service) Act 1979** :- The Act is applicable to an establishment which employees 5 or more Inter-State migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain
facilities such as housing, medical aid, traveling expenses from home up to the establishment and back etc.

o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act 1996 and the Cess Act of 1996 :- All the establishments who carry on any building or other construction work and employees 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens First Aid Facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registered Officer appointed by the Government.

p) Factories Act 1948 :- The act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

3. Arbitration (GCC Clause 25.3)

3.1 Except where otherwise specified in the contract and subject to the powers delegated to him by Government under the code, rules then in the force, the decision of the Superintending Engineer of the Circle for the time being shall be final, conclusive and binding on all parties of the contract upon all questions relating to the meaning of the specifications, designs, drawings and instruction hereinbefore mentioned and as to the quality of workmanship or materials used on the work, or as to any other question, claim right, matter or things whatsoever, if any way arising out of, or relating to the contract, designs, drawings, specifications, estimates, instructions, orders, or other 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 completion or abandonment thereof.

3.2 The Contractor may within thirty days of receipt by him of any order passed by the Superintending Engineer of the Circle as aforesaid appeal against it to the Chief Engineer, concerned with the contract work or project provided that -

(a) The accepted value of the contract exceeds Rs. 10 lakhs
   (Rupees Ten lakhs)
(b) Amount of claim is not less than Rs. 1.00 Lakh
   (Rupees One Lakh).

3.3 If the Contractor is not satisfied with the order passed by the Chief Engineer as aforesaid, the Contractor may, within thirty days of receipt by him of any such order appeal against it to the concerned Secretary, Public Works Department/Irrigation Department who, if convinced that Prima-facie the Contractors claim rejected by Superintending Engineer/Chief Engineer is not frivolous and that there is some substance in the claim of the Contractor as would merit a detailed examination and decision by the Standing Committee, shall put up to the Standing Committee at Government level for suitable decision (Vide PW Circular No. CAT-1086-CR-110/Bldg.2 Dated 7.5.1986).
SECTION – 4

CONTRACT DATA

Contractor
Engineer

No. of corrections

Executive
**CONTRACT DATA**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Reference with respect to Section - 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the Employer is <strong>Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.</strong></td>
<td>[Cl.1.1]</td>
</tr>
<tr>
<td>2.</td>
<td>The Engineer is <strong>Executive Engineer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.</strong></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The Defects Liability Period is <strong>60 Months</strong> from the date of Completion.</td>
<td>[Cl.1.1 &amp; 35]</td>
</tr>
<tr>
<td>4.</td>
<td>The Start Date shall be 7 days from the date of issue of the Notice to proceed with the work.</td>
<td>[Cl.1.1]</td>
</tr>
<tr>
<td>5.</td>
<td>The Intended Completion Date for the whole of the Works is <strong>30 (Thirty) months</strong> including monsoon period after start of work with the following milestones:</td>
<td>[Cl.1.1, 17 &amp; 28]</td>
</tr>
</tbody>
</table>

**Milestone dates:**

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Physical Works to be completed</th>
<th>Period for Mild Stone</th>
<th>Period from the start-date</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Milestone 1 (work upto plinth) : 20 % of the contract price</td>
<td>9 (Nine) Months</td>
<td>9 (Nine) Months</td>
</tr>
<tr>
<td>ii)</td>
<td>Milestone 2 (Superstructure work) : 35 % of the contract price</td>
<td>15 (Fifteen) Months</td>
<td>24 (Twenty Four) Months</td>
</tr>
<tr>
<td>iii)</td>
<td>Milestone 3 (Internal work) : 20 % of the contract price</td>
<td>3 (Three) Months</td>
<td>27 (Twenty Seven) Months</td>
</tr>
<tr>
<td>iv)</td>
<td>Milestone 4 (External &amp; all finishing work) : 25 % of the contract price</td>
<td>3 (Three) Months</td>
<td>30 (Thirty) Months</td>
</tr>
<tr>
<td>7.</td>
<td>The site is <strong>Strengthening and bitumen of road at custam office to light house at varavade tal and dist. Ratnagiri.</strong></td>
<td>[Cl.1.1]</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The name and identification number of the Contract is:</td>
<td>[Cl.1.1]</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts up to a lead of 50m. and spreading for embankment or stacking as directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Excavation for roadway in hard rock by wedging and chiselling or line drilling including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts up to a lead of 50m. and spreading for embankment or stacking as directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Conveying materials obtained from road cutting including all lifts, laying in layers of 20cm to 30cm. breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50m. to 300m. inclusive from the site of excavation to the site of deposition as directed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Providing trap rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Supplying 80 mm laterite stone metal at the road side for metal including conveying &amp; stacking etc. complete. (50 metre initial lead) Hand broken.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Supplying 60 mm laterite stone metal at the road side for metal including conveying &amp; stacking etc. complete. (50 metre initial lead) Hand broken.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Supplying hard murum at the road site, including conveying and stacking complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Spreading oversize 80 millimeter and size 60 millimeter laterite stone metal including sectioning etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Spreading hard murum for side width etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Compacting for 60 millimeter laterite metal with power roller including necessary labour materials and artificial watering etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Compacting the hard murum side widths including laying in layers on each side with power roller including artificial watering etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</td>
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<tr>
<td>14.</td>
<td>Providing and constructing 75 mm. thick Modified Penetration Macadam (MPM) road surface including all materials, preparing the existing road surface, spreading 40 mm. stone metal layers 30% crusher broken metal + 70% Hand broken (by breaking rubble obtained by blasting) heating and spraying the bitumen of VG-30 grade @ 2 Kg/sqm, spreading 12 mm.size chips compacting with three wheel static roller having weight 8 to 10 MT. to acheive the desired degree of compaction as per Technical Specification Clause 506 etc. complete. Including picking of existing WBM surface.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Open Graded Premix Surfacing- Providing and Laying OGC 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates premixed with bituminous binder transported to site with VTS , laid over a previously prepared surface, finished to the required grade, level, alignment, and rolling to achieve the desired compaction VG-30 Bitumen, including providing and laying seal coat sealing voids in a bituminous surface laid to the specified level and cross fall using Type A seal coat but including Providing and applying tack coat on the prepared surface heating by fames in Boiler and spraying bitumen with sprayer on Dry / Hungry B.T. surface 3 kg/10 sqm. VG-30 bulk bitumen.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Excavation for foundation in earth, soils of all types, sand, gravel, soft murum including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Excavation for foundation in hard rock by blasting including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Providing and laying in situ / ready mix cement concrete of M10 proportion with trap metal in foundation including necessary form work, compacting and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer)) with SCADA with Natural / VSI standard Artificial Sand)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Providing cast in situ / ready mix M15 grade cement concrete for head walls of CD work / retaining walls etc. including necessary form work, compaction, finishing and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer) with SCADA with Natural / VSI standard Artificial Sand, cement 4.05 bags/cumt)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Payment of Royalty charges for supply of material</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|21.| Carry out Quality control tests  
1) Sieve analysis  
2) Crushing Value Water Absorption & Specific Gravity  
3) Penetration Softening point Flash & Fire point, Specific Gravity  
4) Water Absorption Impact & crushing value  
5) Abrasion Value.  
6) Flakiness & Elongation Index  
7) Stripping Value.  
8) Extraction for Carpet  
9) Compressive strength |
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 m. beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete. (Lift upto 1.5 m.)</td>
</tr>
<tr>
<td>23</td>
<td>Excavation for foundation in Hard rock by chiselling, wedging, line drilling, etc. including trimming and levelling the bed, removing the excavated material up to a distance of 50 metres beyond the building area stacking as directed, dewatering and back filling with available earth/ murum watering, ramming etc. complete. (Lift upto 1.5 m.).</td>
</tr>
<tr>
<td>24</td>
<td>Providing trap rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete.</td>
</tr>
<tr>
<td>25</td>
<td>Providing and laying Cast in situ/Ready Mix cement concrete in M15 of trap metal for bed blocks, foundation blocks and such other items including bailing out water, plywood/steel formwork, laying/pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.), with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With natural sand/V.S.I. quality Artificial Sand</td>
</tr>
<tr>
<td>26</td>
<td>Providing and laying in situ / ready mix M-25 plain cement concrete of trap metal for cast in situ piers, abutment, returns, wings etc. including provision of &quot;V&quot; shaped false joints to</td>
</tr>
<tr>
<td>27</td>
<td>Providing weep holes in brick masonry/plain /reinforced concrete abutment, wing wall / return wall with 100mm diameter AC pipe extending through the full width of the structure with slope of 1V: 20H towards drawing face as per drawings and technical specifications etc. complete</td>
</tr>
<tr>
<td>28</td>
<td>Back filling behind abutment, wing wall and return wall as per drawings and technical specifications etc. complete. (by granular material)</td>
</tr>
<tr>
<td>29</td>
<td>Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 cm to 20 cm including watering and compaction etc. complete.</td>
</tr>
<tr>
<td>30</td>
<td>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</td>
</tr>
<tr>
<td>31</td>
<td>Providing and fixing in position TMT - FE - 500 bar reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pards, coping, fins, arches etc. as per detailed designs, drawings and schedules. including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.</td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>32</td>
<td>Supplying and Laying trap stone rubble weighing 50 to 100 Kilogramme for Subarmour layer including quarrying conveying with all the leads and lifts and placing at required places in required line, level, slope and section as directed etc. complete under tidal conditions</td>
</tr>
<tr>
<td>33</td>
<td>Supplying and Laying trap stone rubble weighing 300 to 500 Kilogramme for appron / armour layer including quarrying, conveying with all the leads, lifts, laying in required line, level, slope including necessary equipment and machinery as directed etc. complete in the tidal conditions</td>
</tr>
</tbody>
</table>
| 34  | Carry out Quality control tests  
   a) Concrete Mix design (With all tests on basic materials)  
   b) compressive strength of cement concrete tests  
   c) Crushing value / Compressive strength, Water Absorption & Specific Gravity  
   d) Steel Bar Testing (Above 16 mm Set of 3 bars) (Tensile strength, % elongation, Yield stress, weight per meter, Bend / Rebend test proof stress) |

16. The minimum insurance cover for physical property, injury and death is Rs. 5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, Contractor will pay additional premium necessary to make insurance valid for four occurrences always. [Cl. 13]

17. Site investigation report—To be assessed by the contractor [Cl. 14]

18. The site possession Dates shall be within seven days from issue of notice to proceed with the work. [Cl. 21]

19. Fees and types of reimbursable expenses to be paid to the Dispute Review Board (To be inserted later) [Cl. 25]

20. Appointing Authority for the Dispute Review Board—council, Indian Roads Congress, New Delhi. [Cl. 26]

21. The period for submission of the programme for approval of Engineer shall be 21 days from the issue of letter of Acceptance [Cl. 27.1]

22. The period between programme updates shall be 30 days. [Cl. 27.3]

23. The amount to be withheld for late submission of an update programme shall be Rs. 1.00 lakhs. [Cl. 27.3]

24. The following events shall also be Compensation Events: [Cl. 44]

   Substantially adverse ground conditions encountered during the course of execution of work not provided for in the bidding document—  
   (i) Removal of underground utilities detected subsequently  
   (ii) Significant change in classification of soil requiring additional mobilisation by the contractor e.g. ordinary soil to rock excavation
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(iii)</td>
<td>Removal of unsuitable material like marsh, debris dumps etc. not caused by the contractor</td>
</tr>
<tr>
<td>(iv)</td>
<td>Artesian conditions</td>
</tr>
<tr>
<td>(v)</td>
<td>Seepage, erosion, landslide</td>
</tr>
<tr>
<td>(vi)</td>
<td>River training requiring protection of permanent work</td>
</tr>
<tr>
<td>(vii)</td>
<td>Presence of historical, archaeological or religious structures, monuments interfering with the works</td>
</tr>
<tr>
<td>(viii)</td>
<td>Restriction of access to ground imposed by civil, judicial, or military authority</td>
</tr>
</tbody>
</table>

25. The currency of the Contract is Indian Rupees [Cl. 46]

26. The formula (e) for adjustment of prices are: [Cl. 47]

\[ R = \text{value of work as defined in Clause 47.1 of conditions of Contract} \]

**Adjustment For Labour Component:**

(i) Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

\[ V_L = 0.85 \times P_l \times R \times \frac{\left( L_i - L_o \right)}{L_o} \times 100 \]

\[ V_L = \text{Increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour} \]

\[ L_o = \text{The consumer price index for industrial workers for the state on 28 days preceding the date of opening of bids as published by Labour Bureau, Ministry of Labour, Government of India} \]

\[ L_i = \text{The Consumer Price Index for industrial workers for the month under consideration as published by Labour Bureau, Ministry of Labour, Government of India} \]

\[ P_l = \text{Percentage of labour component of work} \]

(ii) Price adjustment for increase or decrease in the cost of Cement shall be paid in accordance with the following formula:

\[ V_c = 0.85 \times P_c \times R \times \frac{\left( C_i - C_o \right)}{C_o} \times 100 \]

\[ V_c = \text{Increase or decrease in the cost of work during the month under consideration due to changes in rates for cement} \]

\[ C_o = \text{The all India wholesale price index for cement on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi} \]

\[ C_i = \text{The all India average wholesale price index for cement for the month under consideration as published by the Ministry of Industrial Development, Government of India, New Delhi} \]

\[ P_c = \text{Percentage of cement component of the work} \]

**Adjustment For Steel Component:**
(iii) Price adjustment for increase or decrease in the cost of steel shall be paid in accordance with the following formula:

\[ V_s = 0.85 \times PS \times R \times \frac{(Si - So)}{So} \times \frac{100}{100} \]

- Increase or decrease in the cost of work during the month under consideration due to changes in rate for Steel.

\[ So = \text{The all India wholesale price index for Steel (Bars & Rods) on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.} \]

\[ Si = \text{The all India wholesale price index for Steel (Bars & Rods) on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.} \]

\[ Pc = \text{Percentage of cement component of the work.} \]

**Note:** For the application of this clause, index of Bars and Rods has been chosen to represent steel group.

(iv) Adjustment For Bitumen Component:

Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formula:

\[ V_b = 0.85 \times P_b \times \frac{100}{100} \times R \times \frac{(B_i - B_o)}{B_o} \]

- Increase or decrease in the cost of work during the month under consideration due to changes in rates for bitumen.

\[ B_o = \text{The official retail price of bitumen at the IOC depot at nearest centre on the day 28 days prior to the date of opening of bids.} \]

\[ B_i = \text{The official retail price of bitumen at the IOC depot at nearest centre for the 15th day of the month under consideration.} \]

\[ P_b = \text{Percentage of bitumen component of the work.} \]

(v) Adjustment of POL (Fuel and Lubricant) Component:

Price adjustment for increase or decrease in the cost of POL (fuel and lubricant) shall be paid in accordance with the following formula:

\[ V_f = 0.85 \times P_f \times \frac{100}{100} \times R \times \frac{(F_i - F_o)}{F_o} \]

- Increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel & lubricants.

\[ F_o = \text{The official retail price of High speed Diesel at the existing consumer pumps of IOC depot at nearest centre on the day 28 days prior to the date of opening of bids.} \]
<table>
<thead>
<tr>
<th><strong>F</strong> = The official retail price of HSD at the existing consumer pumps of IOC at nearest centre for the 15th day of month of the under consideration.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P</strong> = Percentage of fuel &amp; lubricants component of the work.</td>
</tr>
</tbody>
</table>

**Note:** For the application of this clause, the price of High Speed Diesel & Oil has been chosen to represent fuel & lubricants group.

### Adjustment of Plant and Machinery Spares Component

**(vi)** Price adjustment for increase or decrease in the cost of plant and machinery spares procured by the contractor shall be paid in accordance with the following formula:

\[ V_p = 0.85 \times P_p / 100 \times (P_i - P_o) / P_o \]

- \( V_p \) = Increase or decrease in the cost of work during the month under consideration due to changes in rates for plant and machinery spares.
- \( P_o \) = The all India wholesale price index for Heavy Machinery and Parts on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.
- \( P_i \) = The all India average wholesale price index for heavy machinery and parts for the month under consideration as published by the Ministry of Industrial Development, Government of India, New Delhi.
- \( PP \) = Percentage of plant and machinery spares component of the work.

**Note:** For the application of this clause, index of Heavy Machinery and parts has been chosen to represent the plant and machinery spare group.

### Adjustment of Other Materials Component

**(vii)** Price adjustment for increase or decrease in the cost of local materials other than cement, Steel, bitumen, and POL procured by the contractor shall be paid in accordance with the following formula:

\[ V_m = 0.85 \times P_m / 100 \times R \times (M_i - M_o) / M_o \]

- \( V_m \) = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, Steel, bitumen, and POL.
- \( M_o \) = The all India wholesale price index (all Commodities) on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.
- \( M_i \) = The all India wholesale price index (all Commodities) for the month under consideration as published by the Ministry of Industrial Development, Government of India, New Delhi.

**Note:** For the application of this clause, index of Heavy Machinery and parts has been chosen to represent the plant and machinery spare group.
The following percentage will govern the price adjustment for the entire contract:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>( P_\text{m} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Labour</td>
<td>37%</td>
</tr>
<tr>
<td>2</td>
<td>Cement</td>
<td>14%</td>
</tr>
<tr>
<td>3</td>
<td>Steel (TMT+St. steel)</td>
<td>29%</td>
</tr>
<tr>
<td>4</td>
<td>POL</td>
<td>7%</td>
</tr>
<tr>
<td>5</td>
<td>Plant &amp; Machinery Spares</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Other Materials</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

27. The Proportion of payments retained (retention money) shall be 6% from each bill subject to a maximum of 5% of final contract price. [Cl. 48]

28. Amount of liquidated damages for delay in completion of works

<table>
<thead>
<tr>
<th>(I) for Whole of work</th>
<th>(II) for sectional completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>((1/2000)) of the initial contract price rounded off to the nearest thousand per day i.e. Rs. 2,82,000/- (Rs. Two lakh Eight Two thousand only) per day</td>
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</tr>
<tr>
<td></td>
<td>(Whatever specified in Item 6 of Contract Data) (\frac{1}{200})\textsuperscript{th} of initial contract price for section of work under</td>
</tr>
<tr>
<td></td>
<td>(i) Milestone I—rounded off to the nearest thousand per day i.e. Rs. 5,64,000/- (Rs. Five Lakhs Sixty-Four Thousand only) per day.</td>
</tr>
<tr>
<td></td>
<td>(ii) Milestone II—rounded off to the nearest thousand per day i.e. Rs. 9,86,000/- (Rs. Nine Lakh Eighty-Six Thousand only) per day.</td>
</tr>
<tr>
<td></td>
<td>(iii) Milestone III—rounded off to the nearest thousand per day i.e. Rs. 5,64,000/- (Rs. Five Lakhs Sixty-Four Thousand only) per day.</td>
</tr>
<tr>
<td></td>
<td>(iv) Milestone IV—rounded off to the nearest thousand per day i.e. Rs. 7,05,000/- (Rs. Seven Lakh Five Thousand only) per day.</td>
</tr>
<tr>
<td>29</td>
<td>Maximum limit of liquidated damages for delay in completion of work.</td>
</tr>
<tr>
<td></td>
<td>10 percent of the Initial contract Price rounded off to the nearest thousand i.e. Rs. 5,64,00,000/- (Rs. Five Crore Sixty-Four lakh only)</td>
</tr>
<tr>
<td>30</td>
<td>Amount of Bonus for early completion of whole of the works DELETED</td>
</tr>
<tr>
<td></td>
<td>1 percent of the Initial contract Price (Part of a month to be excluded), rounded off to the nearest thousand. Per month.</td>
</tr>
<tr>
<td>31</td>
<td>Maximum limit of bonus for early completion of work DELETED</td>
</tr>
<tr>
<td></td>
<td>1 percent of the contract price rounded off to the nearest thousand.</td>
</tr>
<tr>
<td>32</td>
<td>The amounts of the advance payment are,</td>
</tr>
<tr>
<td></td>
<td>[Cl. 49]</td>
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<tr>
<td></td>
<td>[Cl. 50]</td>
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<td></td>
<td>[Cl. 50]</td>
</tr>
<tr>
<td></td>
<td>[Cl. 51 &amp; 52]</td>
</tr>
<tr>
<td>Nature of advance</td>
<td>Amount (Rs.)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>i. Mobilization</td>
<td>10% of the Contract price</td>
</tr>
<tr>
<td>ii. Equipment</td>
<td>90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 5% of the Contract price.</td>
</tr>
<tr>
<td>iii. Secured advance for non-perishable materials brought to site</td>
<td>75% of Invoice Value</td>
</tr>
</tbody>
</table>

(The advance payment will be paid to the Contractor no later than 28 days after fulfilment of the above conditions.)

33. Repayment of advance payment for mobilization and equipment: [Cl. 51.3]
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>The advance loan shall be repaid with percentage deductions from the interim payments certified by the Engineer under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 20 percent of the Contract Price or 6 (Six) months from the date of payment of first instalment of advance, whichever period concludes earlier, and shall be made at the rate of 20 percent of the amounts of all Interim Payment Certificates until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiration of the original time for completion pursuant to Clauses 17 and 28.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>34. Repayment of Secured advance</strong></td>
<td>[Cl. 51.4]</td>
</tr>
<tr>
<td>The advance shall be repaid from each monthly payments to the extent materials (for which advance was previously paid pursuant to Clause 51.4 of G. C. C.) have been incorporated into the works.</td>
<td></td>
</tr>
<tr>
<td><strong>35. The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price:</strong></td>
<td>[Cl. 52]</td>
</tr>
<tr>
<td>Performance Security for 2 percent of contract price plus Rs....................... (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5</td>
<td></td>
</tr>
<tr>
<td>The Standard form of Performance Security acceptable to the Employer shall be an unconditional Demand Draft (DD) of the type as presented in Section 8 of the Bidding Documents.</td>
<td></td>
</tr>
<tr>
<td><strong>36. The Schedule of Operating and Maintenance Manuals ...............N/A</strong></td>
<td>[Cl. 58]</td>
</tr>
<tr>
<td><strong>37. The date by which “as built” drawings (in scale as directed) in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be.</strong></td>
<td>[Cl. 58]</td>
</tr>
<tr>
<td><strong>38. The amount to be withheld for failing to supply “as built” drawings by the date required is Rs. 1.00 Lakh.</strong></td>
<td>[Cl. 58]</td>
</tr>
<tr>
<td><strong>39. The following events shall also be fundamental breach of contract: “The Contractor has contravened Sub-Clause 7.1 and Clause 9 of GCC.”</strong></td>
<td>[Cl. 59.2]</td>
</tr>
<tr>
<td><strong>40. The Percentage to apply to the value of the work not completed representing the Employer’s additional cost for completing the Works shall be 20 percent.</strong></td>
<td>[3, Cl. 60]</td>
</tr>
</tbody>
</table>
SECTION – 5

TECHNICAL SPECIFICATION
1.1 **PREAMBLE**

The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in Volume –I, III & IV.

1.2 **SITE INFORMATION**

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

1.2.2 The area in which the Works are located is plain terrain

1.2.3 **General Climatic Conditions**

1.2.3.1 The temperature in this region is as under: During summer months, average maximum temperature is above 40°C.

1.2.3.2 The average annual rainfall in the area is of the order of 500mm

1.2.4 **Seismic Zone (Zone III) Exposure condition- Server.**

The Works are located in Seismic Zone II as defined in IRC: 6-2000.

2 **GENERAL REQUIREMENTS**

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

2.1 **PART- I- General Technical Specifications**

The General Technical Specifications shall be the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS” FIFTH REVISION APRIL 2013, issued by the Ministry of Surface Transport (Road Wing), Government of India and published by the Indian Roads Congress.

2.2 Maharashtra State Public Works Department Specifications Book.

2.3 **PART – II- Supplementary Technical Specifications.**

The Supplementary Technical Specifications shall comprise of various Amendments / Modifications / Additions to the “SPECIFICATION FOR ROAD AND BRIDGE WORKS” referred to in PART–I above and Additional Specifications for particular item of Works not already covered in PART-I.

2.4 A particular clause or a part thereof in “SPECIFICATION FOR ROAD AND BRIDGE WORKS (FIFTH REVISION, APRIL 2013)” referred in PART-I above, where Amended / Modified / Added upon and incorporated in PART-II, referred to above , such Amended / Modified / Added upon, and incorporated in PART-II, referred to above, such Amendment / Modification / Addition supersedes the relevant Clause or part of the Clause.
2.5 The Additional Specifications shall comprises of specifications for particular item of Works not already covered in PART-I.

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

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

2.8 The following Clauses in the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION APRIL 2013)” are applicable /Modified for project.

112, 201, 301, 309,401, 404, 408,501, 502, 503,504, 507, 801, 803, 900, 1000, 3000

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

<table>
<thead>
<tr>
<th>Section</th>
<th>Respective / Clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>100–General</td>
<td>101–121–General</td>
</tr>
<tr>
<td>112–</td>
<td>112–Arrangement for traffic during construction</td>
</tr>
<tr>
<td>200–Site Clearance</td>
<td>201–Clearing and grubbing</td>
</tr>
<tr>
<td></td>
<td>Contractor shall remove and dispose of all materials such as trees, bushes, shrubs, stumps, roots not exceeding 150-mm thick from side berms as directed by Engineer.</td>
</tr>
<tr>
<td><strong>Sub-basecourse</strong></td>
<td>Bituminous Macadam Work shall be carried out as directed by Engineer In-Charge</td>
</tr>
<tr>
<td><strong>500–Base &amp; Surface courses</strong></td>
<td>408–Shoulder</td>
</tr>
<tr>
<td>(Bituminous)</td>
<td>501–General requirement for bituminous pavement layers.</td>
</tr>
<tr>
<td></td>
<td>502–Primer coat over Granular Base.</td>
</tr>
<tr>
<td></td>
<td>503–Tack Coat : Tack coat shall be as specified in the item of work.</td>
</tr>
<tr>
<td></td>
<td>504–Bituminous macadam</td>
</tr>
<tr>
<td></td>
<td>507–Bituminous concrete.</td>
</tr>
<tr>
<td></td>
<td>Cement / Lime shall be used as filler Job mix design for bituminous concrete is mandatory and variation in binder content beyond permissible variation of +/- 0.30% by weight of total mix will be assessed and paid accordingly for lower side only. Adjustment in payment will not be allowed for binder content on higher side.</td>
</tr>
</tbody>
</table>
900—Quality Control for Road Works

10% of the density tests shall be done on edges. “Stone crushing cum screening plant (cone type) should be deployed for getting proper size and grading of aggregates. Combined flakiness and elongation index shall not be allowed more than the specific limit as mentioned in specifications of respective items.”

Complete clause from 901 to 903 is applicable

1000—Material for structure

All material required for various items shall be confirm to Section 1000

3000—Maintenance of road

The following should be added in this clause.

The following clauses shall apply for routine maintenance during defect liability period.

3001—General
3002—Restoration of rain cuts
3003—Maintenance of earthen shoulders
3004—Bituminous work in connection with maintenance and repairs

All the defects observed during the defect liability period shall be rectified by the Contractor at his own cost within specified time period as per instruction Engineer-In-Charge.

2.9 The following Clauses in the “SPECIFICATION FOR ROAD AND BRIDGE WORKS (MAHARASHTRA STATE P.W.D. SPECIFICATION BOOK)” are Applicable/Modified for the Project

Rd 42—Supply of Bitumen VG-30 Grade & VG-10
Rd 47.3—Tack coat Application
Rd 49.3.1—(e) Tack coat

2.10 In the absence of any definite provision on any particular issue in the aforesaid Specification reference may be made to the latest codes and specifications of IRC and BIS in that order. Where even these are silent, the construction and completion of the Works shall confirm to sound engineering practice as approved by the Engineer and in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final binding on the Contractor.
A. SUPPLEMENTARY SPECIFICATION

1. Working Method & Progress Schedule

1.1 Working Method

a) The Contractor shall submit within the time stipulated by the Engineer-in-charge in writing the details of actual methods that would be adopted by the Contractor for the execution, of any items as required by Engineer-in-charge at each of the location, supported by necessary detailed drawings and sketches including those of the plant and machinery that would be used, their locations, arrangement for conveying and handling materials etc. and obtain prior approval of the Engineer-in-charge well in advance of starting such items of work.

b) The Engineer-in-charge reserves the right to suggest modifications or make corrections in the method proposed by the Contractor, whether accepted previously or not at any stage of the Work to obtain the desire accuracy, quality, safety and progress of Work which shall be binding on the Contractor. The Contractor shall take cognizance of such suggestions / objections and suitably modify his method of construction. No claim on account of such change in method of execution will be entertained by the Government so long as specification of the item remains unaltered.

1.2 Progress Schedule

a) The Contractor shall furnish and got approved within twenty one days of the order to start the Work, a programme of Work in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating date of procurement of materials and setting up of plant and machinery. The programme is to be such as to be practicable o achievement towards the completion of the whole Work in the time limit and of the particular items, if any, on the due dates specified in the Contract. Planning and programme of Work shall be done by the mutual discussion between the Engineer-in-Charge and Contracts representative in charge of work.

b) The progress of work shall be reviewed at every milestone and revised programme shall be drawn up, if necessary. No revised programme shall be operative without the approval of Engineer-in-Charge in writing.

c) The Engineer-in-Charge is further empowered to ask for more detailed schedule or schedules say weekly for any item or item in case of urgency of Work as will be directed by him and the Contractor shall supply the same when asked for.

d) Acceptance of the programme or the revised programme, by the Engineer-in-charge shall not relieve the Contractor of his responsibility to complete the whole of the Work by the prescribed time or the extended time if any.

1.3 a) The Contractor shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours restricted to one shift a day for operations to be done under the Government supervision shall be such as may be approved by the Engineer-in-Charge. They shall not be varied without prior approval of the Engineer-in-
b) Night work which requires supervision shall not be permitted except when specifically allowed by Engineer-in-Charge each time, if required by Contractor. The Contractor shall provide necessary lighting arrangement and other measures etc for right Works as directed by Engineers-in-Charge without extra cost.

1.4 The Contractor shall submit reports on progress of Work in forms and statements etc. at periodical intervals in the form of progress charts forms, statements and/or reports as may be approved by the Engineer-in-Charge.

1.5 The Contractor shall maintain programme chart, details regarding machinery, equipment, labour, materials and periodical returns thereof in programme to be got approved from the Engineer-in-charge.

1.6 **Priorities of Works to be executed**

Priorities for items to be executed shall be determined periodically as deemed fit by the Engineer-in-Charge keeping in view the final time limit allowed for the Work and all the time Schedule fixed for intermediate stages of Works as directed by the Engineer-in-Charge

2 **Setting out**

2.1.1 The Contractor shall be responsible for

A) Accurate setting out of the Work in relation to original points lines, and levels of references given by the Engineer-in-charge in writing

B) The correctness of position, levels dimensions and alignments of all parts of the Work

C) The provision of all necessary instruments, appliance and labour in connection with forgoing responsibilities.

2.1.2 If at any time during execution of Works any error appears in the position levels, dimensions or alignment of any part of the Work the Contractor on being required so to do by the Engineer-in-Charge shall at his own cost, rectify such error to the satisfaction of the Engineer-in-Charge whatever the case may be as regards the error.

2.1.3 The checking of any setting out or of any line or level by the Engineer-in-charge shall not in any way relieve the Contractor of his responsibility for the accuracy. Thereof and the Contractor shall carefully protect and preserve all benchmarks pegs and other materials used in setting out the Works. The Contractor shall give a notice not less than 48 hours in advance of his intention to set out or layout for any part of the Works to the Engineer-in-Charge so that checking can be made in time.

2.1.4 **Layout of Work**

i) Layout of the work will be done by Contractor in consultation with the Engineer-in-charge of the Department or his representative Some permanent marks should however be established to indicate the demarcation of the structure or any component thereof made to this permanent marks in measurements books and drawing, signed by the Contractor and departmental officer.

2.2 **Road Work**
2.2.1 The Contractor shall establish working bench marks in the area soon after taking possession of the site. The reference bench mark for the area shall be as directed by the Engineer-in-charge. The working bench marks shall be at the rate of four per Kilometer and also at or near all drainage structure. Over bridges. The working bench marks shall be got approved from Engineer-in-charge. Checks must be made on these bench marks once every month and adjustment if any got approved form Engineer-in-charge and recorded. An up to if date record of all bench marks including approved adjustment, if any shall be maintained by the Contractor and also a copy the supplied to the Engineer-in-charge for this record.

2.2.2 The lines and levels of formulation, side slopes, drainage, carriageways and shoulders shall be carefully set and frequently checked. Care shall be taken to ensue that correct gradients and cross sections are everywhere obtained.

2.2.3 In order to facilitate the setting out the Works, the center line of the carriageway of highway must be accurately established by the Contractor and approved by the Engineer-in-charge. It must then be accurately referred in a manner satisfied to the Engineer-in-charge at every 50m. Intervals in plan and rolling terrain and 20m intervals in hilly terrain and at the curve points as directed by the Engineer-in-charge with marker pegs and change boards set in or near the fence line and a schedule of reference dimension shall be prepared and supplied by the Contractor to the Engineer-in-charge. These markers shall be maintained until the Works reach finished formation level and are accepted by the Engineer-in-charge.

2.2.4 The Works of setting out shall be deemed to be part of general Works, preparatory to the execution of work and no separate payment shall be made for same.

2.2.5 The drawings enclosed with the bidding documents are for general guidance only.

2.2.6 All necessary Registers formatted as per instructions of Engineer-in-charge required for documentation of Works shall be supplied by the Contractor in duplicate before commencement of Work. Record shall be maintained by the Contractor and shall be got verified from time to time by the Engineer-in-charge or his representative.

2.3.1 **Responsibilities of Level and alignment**

The Contractor shall be entirely and exclusively responsibilities for the horizontal and vertical alignment the levels and corrections of every part of work and shall rectify effectively any errors or imperfection there in such rectification shall be carried out by the Contractor at his own cost when instructions are issued to that effect by the Engineer-in-charge.

2.3.2 **Leveling Instrument**

If measurement of item of the work are based on Volumetric measurements, calculated from levels taken before and after construction of the item a sufficient number of leveling instruments staves tapes etc. will have to be kept availability by the Contractor at the site of work for this purpose. Lack of such leveling instruments staves tapes etc. in required number may cause delay in measurement of the work. The Contractor will have therefore to keep sufficient number of these instruments in working condition readily available at the Work site.

2.4 **Ancillary Works**
The Contractor shall submit to Engineer-in-charge in writing the details of all ancillary Works including layout and specifications to be followed for its constructions. Ancillary Works shall not be taken up in hand unless approved by Engineer-in-charge. The Engineer-in-charge reserves the right to suggest modifications or make complete changes in the layout and specifications proposed by the contract at any stage to ensure the safety on the work site. The Contractor shall carry out all such modification to the ancillary Works at his own expenses as ordered by the Engineer-in-charge.

All above conditions are incidental or Works & no extra payment will be made for this.
GENERAL SPECIFICATION FOR WATERPROOFING

(1) The work of waterproofing described in the following items shall be carried out by the contractor only through a renowned specialist waterproofing agency using cement waterproofing compounds, as approved in writing by the Engineer-in-charge.

(2) The Contractor shall give before execution, detailed specifications for each item of works of waterproofing to be executed according to the specifications of the specialized agency, he proposes to employ, for approval. The work shall not be started unless approval in writing is given by the Engineer in charge to the said specification.

(3) The Contractor shall give a guarantee bond on requisite stamp paper for a minimum period of 7 years for all the items of waterproofing done. During the guarantee period the Contractor shall entirely be responsible to rectify any defect at his own cost to maintain the work in waterproof condition. The waterproofing Contractor shall also have to make good all the surroundings disturbed by him during the rectification work at his own cost. The form of written guarantee shall be on a legal stamped agreement acceptable to the Government. The Guarantee shall be given within one month from the date of completion of water proofing treatment but any delay in furnishing the guarantee shall not relieve the contractor from implications of the clause.

(4) 10% (Ten percent) of the cost of the waterproofing work executed shall be retained as “Retention Money” for a period of 7 years covering the guarantee, and the same shall be released only after satisfactory performance of the treatment during guarantee period of 7 years. This amount may be converted into any approved interest bearing security (for 7 years after completion of defect liability period), in the name of Executive Engineer, Integrated Unit (P.W,) division Mumbai on receipt of such written request from the contractor.

(5) The waterproofing agency as approved by Engineer-in-charge shall provide and install at his own cost the following for his own use and remove the same after completion of the work:
I) Two pumps electrical/diesel operated for watering and curing of work at any level in the building. Curing for all items shall be carried out for a minimum period of 14 days.

II) Temporary Mild Steel Water storage tanks.

III) Temporary galvanized iron pipeings and fittings for water line.

IV) Flexible hose lengths.

V) Cement Godown, site office.

(6) Injections to reinforced cement concrete slab, wherever required, have to be undertaken by the Contractor free of cost.

(7) Before starting the waterproofing work, the surface receiving the treatment shall be cleaned properly.

(8) The item of waterproofing as given in the Schedule ‘B’ applies for work in any position and on any floors and at any heights. The lift of materials shall not form any criteria for extra payment.

(9) For the reference of contractor, general guideline specifications for waterproofing are attached herein with the general specification for waterproofing.

**General Guidelines for Waterproofing work**

*For reference of contractor.*

(Note: The contractor is required to give detailed specification for each item of waterproofing work).

1. Roof, Slab and terrace:
   
   Providing average 112 mm thick cement based Indian waterproofing treatment with Brick Bat Coba beading by keeping the treatment minimum 75 mm thick at the rain water pipe point and keeping the gradient not flatter than 1 in 100.

   a) Cleaning the surface to the requirements.
   
   b) Giving a coat of wash mixed with cement.
c) Providing 12mm thick cement mortar bed, with admixture of waterproofing compound to form a bed for brickbats. Special care shall be taken at the junction of parapet and terrace slab to ensure gaps, if any, are properly sealed.

d) Placing brickbats of varying size (average 80 mm thick) to proper slope and grouting their joints with chemical process in cement mortar with 2% of waterproofing compound.

e) Providing all around the terrace large waterproof wattas (rounding’s) up to a height of 30 cm in PCC or as directed above the finished level of waterproof treatment.

f) Finishing: Finishing the top surface with average 20 mm thick layers of cement mortar 1:3 added with jute fibre at one kilogram per bag, including finishing the surface smooth with cement slurry mixed with approved waterproofing compound, marking finished surface with false squares of 300mmx300 mm.

g) **Curing**: Curing shall be done for 14 days. Curing of top surface shall be done by making base (wattas) with lean cement mortar to keep water standing on the surface.

h) **Carrying out the test**: The test shall be carried out by pounding method. Payment for the item shall be released only after results of pond test are satisfactory.

2. **Toilets**:

a) Cleaning the surface to the department’s requirements.

b) Giving a coat of wash mixed with cement.

c) Providing average 15 cm thick waterproofing treatment to the bottom of toilet floors.

d) Providing 20 mm to 25 mm thick cement mortar waterproof treatment to the walls of toilets up to the height of 0.30 metre above the finished floor level.

e) Providing waterproof wattas all around the toilets.

f) Grouting the mouths of inlets and outlets

g) Filling sunk portion with brickbats including waterproof mortar and the top surface left rough to form a key for tiles.

3. **Overhead tanks**:

Work under some items in Schedule 'B' of the tender pertains to construction of overhead water tank. After completion of the work, water tank as a whole shall be tested for water tightness and leakages if any shall be rectified forthwith ‘without any extra cost to the department.'
GUARANTEE BOND FOR WATERPROOFING WORK
(On stamp paper worth Rupees 100/-)

Name of work : Construction of Proposed Family Court Building on Survey No 341, CTS No 629 at Bandra (East) Mumbai.

Name of Agency : 
Agreement No. :

The contractor hereby declares that the water proofing work carried out under this contract shall be of the best quality and workmanship and shall strictly in accordance with the specifications and particulars contained/mentioned in the clause hereof and the contractor hereby guarantee that the said work should continue to conform to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the description and quality aforesaid or have deteriorated (and the decision of the Engineer in charge in that behalf will be final and conclusive) the department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the contractor’s risk and all the provisions herein contained relating to rejection of work etc. shall apply. The contractor shall, if so called upon, have to make good the work etc. or such portion thereof, as is rejected by the Engineer in charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department in that behalf under this contract or otherwise.

Date :

Place :

Contractor
GUARANTEE BOND FOR Performance SECURITY
(ON STAMP PAPER WORTH RUPEES 100/-)

In consideration of the Governor of Maharashtra (herein after referred to as “the Government“) having agreed to exempt ______________________________ (herein after referred to as “the contractor“) from depositing with the Government in cash the sum of Rs. _____ (Rupees ________________________ only.) being the amount of performance security payable by the Contractor to the Government under the terms and conditions of the agreement dated the __________ day of __________ 2017 and made between the Government on the one part, and the Contractor of the other part (hereinafter referred to as “the said Agreement“) for _________ as security for due observance and performance by the Contractor of the terms and conditions of the said agreement, on the contractor furnishing to the Government a Guarantee in the prescribed form of a Schedule bank in India being in fact those presents in the like sum of Rs._________ (Rs. ________________________ only.)

We ________________________________BANK / LIMITED registered in India under __________Act and having one of our Local Head office at __________ do hereby:

1. GUARANTEE TO THE GOVERNMENT:

   (a) Due performance and observance by the Contractor of the terms, covenants and conditions on the part of the contractor contained in the said Agreement and

   (b) Due and punctual payment by the Contractor to the Government of all sums of money, losses, damages, costs, charges, penalties and expenses payable to the Government by the contractor under or in respect of the said Agreement.

2. Undertake to pay to the Government on demand and without demur and notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding filed in any Court of Tribunal relating thereto the said sum of Rs. ________ (Rupees ________________________ Only.) Or such less sum may be demanded by the Government from us, our liability hereunder being absolute and unequivocal and agree that.

3.(a) The guarantee herein contained shall remain in full force and effect during the subsistence of the said Agreement and that the same will continue to be enforceable till all the dues of the Government under or by virtue of the said Agreement have been duly paid and its claims satisfied or discharged and till the Government certifies that the terms
and conditions of the said Agreement have been fully and properly carried out by the Contractor.

(b) We shall not be discharged or released from liability under this Guarantee by reasons of

(i) Any change in the constitution of the Bank of the Contractor; or

(ii) Any agreement entered into between the Government and the Contractor with or without our consent.

(iii) Any forbearance or indulgence shown to the Contractor;

(iv) Any variations in the terms, covenants or conditions contained in the said Agreement.

(v) Any time given to the Contractor, or;

(vi) Any other conditions or circumstances under which, in law, a surety would be discharged.

(c) Our liability herein under shall be joint and several with that of the Contractor as if we were the principal debtors in respect of the said sum of Rs. ________________ (Rupees ________________ only.) and

(d) We shall not revoke this guarantee during its currency except with the previous consent in writing of the Government.

IN WITNESS WHEREOF THE common seal of ________________ has been herein affixed this _________ day of _________ 2017. The common seal of ________________ was pursuant to the resolution of the Board of Directors of the company dated the _________ day of _________ Herein affixed in the presence of _________ who, in token thereof, have here to set their respective hands in the presence of.

(1) __________________________

(2) __________________________
प्रकृति चूर्णिती आवक आणि खप यांचा हिलेव डावकिणारी

नौदव्ही क्रमांक १

कामाचे नाव :-  

माणूस सत्यांगाच्या कामाचे ठिकाणी असलेली शिल्पक

आवक आणि खप यांचा हिलेव

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कंजॅटदरीची सहस्त्र अभीतंत्राची सहस्त्र

नौदव्ही क्रमांक २

निर्मितप्राप्त बार्चिंकर आदवड़बांधांचे उपयोगात आणले आवक असलेले सिम्बंड परिणाम व प्रत्यक्ष उपयोगात आणलेले परिणाम यांची तुलना दाखविलेकर कोडक

आदवड़बांधांचे केलेल्या कामाचे एकूण अंदाज परिणाम

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### रोजी संपर्ण-या आठवे वातावरणीय मापदंड

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कंदक्षदताची सही
अवश्यकाची सही

Contractor  No. of corrections  Executive
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#### कंट्रक्टपासून सही

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#### नॉडवारी क्रमांक 2

निर्दिष्टसाठी बाबीवर आउटबाउंडविमध्ये उपयोगात आणलेले अवस्था असलेले परिमाण व प्रत्यक्ष उपयोगात आणलेले परिमाण पंचमी तुलना दाखविणारे कोठक

आउटबाउंडविमध्ये केलेल्या कामाचे एकूण अंदाज परिमाण

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DECLARATION OF THE CONTRACTOR

I/We hereby declare that I/we have made me/us thoroughly conversant with the local conditions regarding all materials and labour on which I/we have based my/our rates for this tender. The specifications and lead of materials on this work have been carefully studied and understood by me/us before submitting this tender. I/we undertake to use only the best materials approved by the Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001 or his duly authorised representative before starting the work and to abide by his decision.

I/We hereby undertake to pay the labourers engaged on the work as per minimum wages Act 1948 applicable to the Zone concerned.

Signature of Contractor

Contractor

Engineer

No. of corrections

Executive
**DRAWINGS**

**CONTRACT DRAWINGS:**

The Contract Drawings provided for tendering purpose with the tender documents shall be used as a reference only. Contractor should visualize the nature and type of work contemplated and to ensure that the rates and prices quoted by him in the bill of quantities take due consideration of the complexities of work involved during actual execution / construction as experienced contractors in the field.

The tendered rates / prices for the work shall be deemed to include the cost of preparation, supply and delivery of all necessary drawings, prints, tracings and negatives which the contractor is required to provide in accordance with the contract.

**DOCUMENTATION:**

If so ordered by the Engineer-in-charge, the contractor will prepare drawings of the work as constructed and will supply original and three copies to the Engineer who will verify and certify these drawings.

Final as constructed drawings shall then be prepared by the contractor and applied in triplicate along with a micro-film of the same to Engineer for record and reference purpose at the contractor's cost.
33. ADDITIONAL TECHNICAL CONDITIONS

33.1 The work shall be carried out in the best workmanship like manner and in strict accordance with P.W.D. hand book Volume I & II 1960. Edition supplemented by specification attached and as per Standard Specifications Book of Government of Maharashtra of 1979 and as per specific order of the Executive Engineer or his representative from time to time.

33.2 The orders issued by the Government in P.W. Department and the Superintending Engineer, from time to time regarding construction procedure shall be binding on the contractor in addition to the specification contained in P.W.D. hand book Volume I & II and book of standard specification of P.W. Department and the specifications enumerated above.

33.3 The contractor shall submit day to day account of the materials issued to him and its use and also monthly progress and programme of work.

33.4a) The concrete mix design shall be got approved from Engineer in charge and the mix design shall give preliminary strength of 1.33 times working strength.

b) The maximum size of aggregate permissible would be as per A-7 page-8 of Standard Specifications Book 1979 Edition.

33.5 The items provided with watering for curing include continuous watering operations throughout the day including lunch hours and also during holidays. For this purpose contractor shall have to construct tank of 5000 liters capacity near each building and provide necessary Booster Pumps etc. to ensure adequate curing and wetting. Hold fasts coming in contact with R.C.C. columns shall be of sizes 30 cm x 4 cm to be fitted with two rows, nails fixed properly in concrete.

33.6 For all sand covering items, use of washed mixer sand (with sand washing machine) is obligatory. No separate claim in this regard will be entertained.

33.7 Material testing requirement frequency and type of testing is enclosed separately. Material to be used shall be tested accordingly and cost shall be borne by contractor.

33.8 For R.C.C. centring plywood and M.S. sheet of approved quality shall be used and adjustable props and fasteners shall be used.

33.9 The execution of any work from external side of the building 'H' frame steel scaffolding shall be used. No separate payment for claims in this regard shall be entertained.

33.10 The scaffolding shall not be supported on existing external walls of the building by making holes in it and also the scaffolds shall not rest on any part of the building.

33.11 Quality Assurance Manual: Contractor shall prepare the quality assurance manual booklet in consultation with the Executive Engineer. Quality assurance manual shall be comprehensive document covering every aspect of the work. Superintending Engineer shall approve this document. The quality manual document shall be used only after approval from Superintending
Engineer. Provision of the quality manual is binding on the contractor. Quality manual shall be treated as a legal document as per with this contract document. It shall be used till the work is completed in full respect.

34. **SPECIAL CONDITIONS FOR QUALITY CONTROL TESTS AND FREQUENCY**

34.1 Overall quality of the work depends on the quality of ingredient material being used in the work and exercising adequate control over it. It is therefore prime responsibility of the Contractor to get the ingredient material and product tested strictly as per the frequencies stipulated in the Annexure.

34.2 The Quality Control test shall be carried out at various stages of work wise selection of material to be procured for work, acceptance of procured material before its use on the work, in view of its strength, durability, serviceability etc. and as directed by Engineer-in-charge for any other reason of public interest.

34.3 The entire charges towards testing such as sampling, carrying samples to Lab testing of samples etc. will have to be borne by the Contractors.

34.4 The right of acceptance/rejection of material/work done specified above is reserved by Engineer-in-charge in view of non confirmation to frequency of testing.

34.5 In case of failure to observe the frequency of testing by the contractor the Engineer-in-charge will be at liberty to recover testing charges fixed by the dep’t. At penal rate. The penal rate will be two times the prevailing testing charges.

34.6 **SAMPLES AND TESTING MATERIALS**

(A) All material to be used on civil construction work shall be got approved in advance from the Engineer-in-charge and for furniture work wood, plywood, laminates, veneer etc. from Architect and Engineer in charge and shall pass the lest and / or analysis required by him which will be:

(i) As specified in the specification for the items concerned and / or

(ii) ISI Specifications (whichever and wherever applicable) or

(iii) Such recognised specifications acceptable to Engineer-in-charge as equivalent there to or in absence or such authorised specification.

(iv) Such requirement test and / or. analysis as may be specified by the Engineer -in-charge in order of precedence given above.

(B) The contractor shall at his risk and cost make all arrangements and / or shall provide for all such facilities as the Engineer-in-charge may require for collecting, preparing required number of samples for tests or for analysis at such time and to such place or places as may be directed by the Engineer and bear all charges and cost of testing. Such. samples shall also be deposited with the Engineer-in-charge.

(C) The contractor shall if and when required, submit at his cost the samples of materials to be tested or analysed and if, so directed shall not make use of or incorporate in the work any
materials represented by the samples until the required tests or analysis have been made and the materials, finally accepted by the Engineer-in-charge.

(D) The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of the materials.

(E) The contractor or his authorised representative will be allowed to remain present in the departmental laboratory while testing samples furnished by him. However the results of all the tests carried out in the departmental laboratory in the presence or absence of the contractor or his authorised representative will be binding on the contractor.

(F) The contractor shall at his own cost set up laboratory to carry out the routine tests of materials which are to be used on the work the tests will have to be carried out either in his field laboratory or in an approved laboratory. In case tests are carried out in field laboratory, at least 50% tests should be carried out in nearest control laboratory of the Department.

(G) In case of material procured by the contractor, testing as required by the codes and specifications shall be arranged by him at his own cost. Testing shall be done in the presence of authorised representative of the Engineer-in-charge at the nearest laboratory If additional testing other than as required b) specification is ordered, the testing charges, shall be borne by the Department, if the test results are satisfactory and by the contractor if the same are not satisfactory.

(H) In case of materials supplied by the Government, if the contractor demands, certain testing, the charges thereof shall be paid by contractor if the testing results are satisfactory and by the Department if the same are not satisfactory.
(9) The work of waterproofing described in the following items shall be carried out by the contractor only through a renowned specialist waterproofing agency using cement waterproofing compounds, as approved in writing by the Engineer-in-charge.

(10) The Contractor shall give before execution, detailed specifications for each item of works of waterproofing to be executed according to the specifications of the specialized agency, he proposes to employ, for approval. The work shall not be started unless approval in writing is given by the Engineer in charge to the said specification.

(11) The Contractor shall give a guarantee bond on requisite stamp paper for a minimum period of 7 years for all the items of waterproofing done. During the guarantee period the Contractor shall entirely be responsible to rectify any defect at his own cost to maintain the work in waterproof condition. The waterproofing Contractor shall also have to make good all the surroundings disturbed by him during the rectification work at his own cost. The form of written guarantee shall be on a legal stamped agreement acceptable to the Government. The Guarantee shall be given within one month from the date of completion of water proofing treatment but any delay in furnishing the guarantee shall not relieve the contractor from implications of the clause.

(12) 10% (Ten percent) of the cost of the waterproofing work executed shall be retained as “Retention Money” for a period of 7 years covering the guarantee, and the same shall be released only after satisfactory performance of the treatment during guarantee period of 7 years. This amount may be converted into any approved interest bearing security (for 7 years after completion of defect liability period), in the name of Executive Engineer, Integrated Unit (P.W,) division Mumbai on receipt of such written request from the contractor.

(13) The waterproofing agency as approved by Engineer-in-charge shall provide and install at his own cost the following for his own use and remove the same after completion of the work:

I) Two pumps electrical/ diesel operated for watering and curing of work at any level in the building. Curing for all items shall be carried out for a minimum period of 14 days.
II) Temporary Mild Steel Water storage tanks.

III) Temporary galvanized iron pipeings and fittings for water line.

IV) Flexible hose lengths.

V) Cement Godown, site office.

(14) Injections to reinforced cement concrete slab, wherever required, have to be undertaken by the Contractor free of cost.

(15) Before starting the waterproofing work, the surface receiving the treatment shall be cleaned properly.

(16) The item of waterproofing as given in the Schedule ‘B’ applies for work in any position and on any floors and at any heights. The lift of materials shall not form any criteria for extra payment.

(9) For the reference of contractor, general guideline specifications for waterproofing are attached herein with the general specification for waterproofing.

**General Guidelines for Waterproofing work**

*For reference of contractor.*

(Note: The contractor is required to give detailed specification for each item of waterproofing work).

1. **Roof, Slab and terrace:**
   - Providing average 112 mm thick cement based Indian waterproofing treatment with Brick Bat Coba beading by keeping the treatment minimum 75 mm thick at the rain water pipe point and keeping the gradient not flatter than 1 in 100.
   
   a) Cleaning the surface to the requirements.
   
   b) Giving a coat of wash mixed with cement.
   
   c) Providing 12 mm thick cement mortar bed, with admixture of waterproofing compound to form a bed for brickbats. Special care shall be taken at the junction of parapet and terrace slab to ensure gaps, if any, are properly sealed.
   
   d) Placing brickbats of varying size (average 80 mm thick) to proper slope and grouting their joints with chemical process in cement mortar with 2% of waterproofing compound.
   
   e) Providing all around the terrace large waterproof wattas (rounding’s) up to a height of 30 cm in PCC or as directed above the finished level of waterproof treatment.
f) **Finishing:** Finishing the top surface with average 20 mm thick layers of cement mortar 1:3 added with jute fibre at one kilogram per bag, including finishing the surface smooth with cement slurry mixed with approved waterproofing compound, marking finished surface with false squares of 300mmx300 mm.

g) **Curing:** Curing shall be done for 14 days. Curing of top surface shall be done by making base ( wattas ) with lean cement mortar to keep water standing on the surface.

h) **Carrying out the test:** The test shall be carried out by pounding method. Payment for the item shall be released only after results of pond test are satisfactory.

2. **Toilets:**
   a) Cleaning the surface to the department’s requirements.
   b) Giving a coat of wash mixed with cement.
   c) Providing average 15 cm thick waterproofing treatment to the bottom of toilet floors.
   d) Providing 20 mm to 25 mm thick cement mortar waterproof treatment to the walls of toilets up to the height of 0.30 metre above the finished floor level.
   e) Providing waterproof wattas all around the toilets.
   f) Grouting the mouths of inlets and outlets.
   g) Filling sunk portion with brickbats including waterproof mortar and the top surface left rough to form a key for tiles.

3. **Overhead tanks:**
   Work under some items in Schedule 'B' of the tender pertains to construction over head water tank. After completion of the work, water tank as a whole shall be tested for water tightness and leakages if any shall be rectified forthwith without any extra cost to the department.
GUARANTEE BOND FOR WATERPROOFING WORK
(On stamp paper worth Rupees 100/-)

Name of work: Construction of Proposed Family Court Building on Survey No 341, CTS No 629 at Bandra (East) Mumbai.

Name of Agency:

Agreement No.:

The contractor hereby declares that the water proofing work carried out under this contract shall be of the best quality and workmanship and shall strictly in accordance with the specifications and particulars contained/mentioned in the clause hereof and the contractor hereby guarantee that the said work should continue to conform to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the description and quality aforesaid or have deteriorated (and the decision of the Engineer in charge in that behalf will be final and conclusive) the department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the contractor’s risk and all the provisions herein contained relating to rejection of work etc. shall apply. The contractor shall, if so called upon, have to make good the work etc. or such portion thereof, as is rejected by the Engineer in charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department in that behalf under this contract or otherwise.

Date:

Place: ____________________________ Contractor
GUARANTEE BOND
(On Stamp Paper worth Rupees 100/-)

NAME OF WORK: Construction of Proposed Family Court Building on Survey No. 341, CTS No. 629 at Bandra (E) Mumbai.

NAME OF AGENCY:

AGREEMENT NO.:

The Contractor hereby declares that the Anti termite treatment where ever necessary under the contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications and particulars contained/mentioned in the clause hereof and the Contractor hereby guarantee that the said work should continue to conform to the description to the description and quality aforesaid for a period of Ten years from the date of handling over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the description and quality aforesaid for have deteriorated (and the decision of Engineer in charge in that behalf will be final and conclusive) the department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the contractor’s risk and all the provisions herein contained relating to rejection of work etc. shall apply.

The contractor shall, if so called upon, have to make good the work etc. or such portion thereof, as is rejected by the Engineer in charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department in that behalf under this contract or otherwise.

Date: ____________________________ Contractor

Place: ____________________________
GUARANTEE BOND FOR PERFORMANCE SECURITY

(ON STAMP PAPER WORTH RUPEES 100/-
)

In consideration of the Governor of Maharashtra (herein after referred to as “the Government“) having agreed to exempt ______________________________ (herein after referred to as “the contractor“) from depositing with the Government in cash the sum of Rs. _____ (Rupees ___________________________ Only.) being the amount of performance security payable by the Contractor to the Government under the terms and conditions of the agreement dated the __________ day of __________ 2017 and made between the Government on the one part, and the Contractor of the other part (hereinafter referred to as “the said Agreement“) for _________ as security for due observance and performance by the Contractor of the terms and conditions of the said agreement, on the contractor furnishing to the Government a Guarantee in the prescribed form of a Schedule bank in India being in fact those presents in the like sum of Rs._________ (Rs. ________________________ Only.) We ______________________________ BANK / LIMITED registered in India under __________ Act and having one of our Local Head office at __________ do hereby:

1. GUARANTEE TO THE GOVERNMENT:

(a) Due performance and observance by the Contractor of the terms, covenants and conditions on the part of the contractor contained in the said Agreement and

(b) Due and punctual payment by the Contractor to the Government of all sums of money, losses, damages, costs, charges, penalties and expenses payable to the Government by the contractor under or in respect of the said Agreement.

2. Undertake to pay to the Government on demand and without demur and notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding filed in any Court of Tribunal relating thereto the said sum of Rs. ________ (Rupees ___________________________ Only.) Or such less sum may be demanded by the Government from us, our liability hereunder being absolute and unequivocal and agree that.

3. (a) The guarantee herein contained shall remain in full force and effect during the subsistence of the said Agreement and that the same will continue to be enforceable till all the dues of the Government under or by virtue of the said Agreement have been duly paid and its claims satisfied or discharged and till the Government certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the Contractor.

(b) We shall not be discharged or released from liability under this Guarantee by reasons of
(i) Any change in the constitution of the Bank of the Contractor; or
(ii) Any agreement entered into between the Government and the Contractor with or without our consent.
(iii) Any forbearance or indulgence shown to the Contractor;
(iv) Any variations in the terms, covenants or conditions contained in the said Agreement.
(v) Any time given to the Contractor, or:
(vi) Any other conditions or circumstances under which, in law, a surety would be discharged.

(c) Our liability herein under shall be joint and several with that of the Contractor as if we were the principal debtors in respect of the said sum of Rs. ________________ (Rupees ________________ only.) and

(d) We shall not revoke this guarantee during its currency except with the previous consent in writing of the Government.

IN WITNESS WHEREOF THE common seal of ________________ has been herein affixed this _______ day of __________ 2017. The common seal of ________________ was pursuant to the resolution of the Board of Directors of the company dated the _______ day of __________. Herein affixed in the presence of __________ who, in token thereof, have here to set their respective hands in the presence of:

(1) __________________________

(2) __________________________
वक्तृत्वार्थ अतिक्रमण अभिलेख को प्रभावित करने वाले दफ़्तरिवधारियों का रूपांतरण

क्रमांक 1

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क्रमांक 2

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<th>वाक्यांश-अवकाश-अंतर्गत</th>
<th>संयोजन / पौराणिक (पौराणिक प्रारंभ)</th>
<th>केलेक्टर कंपनी-विशेष विभाग</th>
</tr>
</thead>
<tbody>
<tr>
<td>के.-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>के.-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>के.-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>के.-4</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>के.-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>के.-6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

कंठादर्शकों को ___________________________ अवेश्यकारों को ___________________________

Contractor                      No. of corrections                      Executive Engineer
### Contractor

**No. of corrections**

**Executive Engineer**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Number of Corrections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### सौंपी संपर्क - ग्यारुरसरा स्थापत्यकला योजना

<table>
<thead>
<tr>
<th>अ.क.</th>
<th>कार्यालय नाम</th>
<th>कार्यालय कार्यालय अंदाजे परिणाम</th>
<th>कार्यालय अभाव</th>
<th>कार्यालय अभाव परिणाम में वर्ग</th>
<th>प्रमुख कार्यालय गोविंदपुराणे परिणाम में वर्ग</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>परिणाम</td>
<td>वक्रम</td>
<td>परिणाम</td>
<td>वक्रम</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

कंट्रैक्टर सही: ____________________________
प्रमुख निदेशक सही: ____________________________

Contractor: ____________________________
No. of corrections: ____________________________
Executive Engineer: ____________________________
DECLARATION OF THE CONTRACTOR

I/We hereby declare that I/we have made me / us thoroughly conversant with the local conditions regarding all materials and labour on which I/we have based my/our rates for this tender. The specifications and lead of materials on this work have been carefully studied and understood by me/us before submitting this tender. I/we undertake to use only the best materials approved by the Executive Engineer, Maharashtra maritime Board, Mumbai-01 or his duly authorised representative before starting the work and to abide by his decision.

I/We hereby undertake to pay the labourers engaged on the work as per minimum wages Act 1948 applicable to the Zone concerned.

Signature of Contractor
\textit{D R A W I N G S}

\textbf{CONTRACT DRAWINGS:—}

The Contract Drawings provided for tendering purpose with the tender documents shall be used as a reference only. Contractor should visualize the nature and type of work contemplated and to ensure that the rates and prices quoted by him in the bill of quantities take due consideration of the complexities of work involved during actual execution / construction as experienced contractors in the field.

The tendered rates / prices for the work shall be deemed to include the cost of preparation, supply and delivery of all necessary drawings, prints, tracings and negatives which the contractor is required to provide in accordance with the contract.

\textbf{DOCUMENTATION:}

If so ordered by the Engineer-in-charge, the contractor will prepare drawings of the work as constructed and will supply original and three copies to the Engineer who will verify and certify these drawings.

Final as constructed drawings shall then be prepared by the contractor and applied in triplicate along with a micro-film of the same to Engineer for record and reference purpose at the contractors cost.
## Annexure 'A'

### QUALITY CONTROL TESTS

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Material</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stone</td>
<td>i) Compressive Strength.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Water Absorption.</td>
</tr>
<tr>
<td>2</td>
<td>Trap Metal</td>
<td>i) Crushing value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Impact value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Abrasion value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Water Absorption.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v) Flakiness Index &amp; Elongation index</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi) Gradation</td>
</tr>
<tr>
<td>3</td>
<td>Bricks</td>
<td>i) Crushing Strength.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Water Absorption.</td>
</tr>
<tr>
<td>4</td>
<td>Flooring Tiles</td>
<td>i) Flexural strength</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Water Absorption.</td>
</tr>
<tr>
<td>5</td>
<td>Glazed Tiles</td>
<td>i) Water Absorption</td>
</tr>
<tr>
<td>6</td>
<td>Cement</td>
<td>i) Compressive Strength.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Initial setting time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Final setting time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Specific Gravity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v) Soundness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi) Fineness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vii) Std. Consistency</td>
</tr>
<tr>
<td>7</td>
<td>Steel</td>
<td>i) Weight per meter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Ultimate Tensile stress.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Yield stress</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Elongation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v) Bend Test.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi) Chemical tests</td>
</tr>
<tr>
<td>8</td>
<td>Interlocking concrete paving block</td>
<td>i) Compressive Strength.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Flexural Test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Resistance to wear</td>
</tr>
<tr>
<td>9</td>
<td>Wood work (shutters)</td>
<td>i) End immersion tests</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Knife test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Glue adhesion test</td>
</tr>
<tr>
<td>10</td>
<td>Cement Concrete</td>
<td>i) Mix design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Compressive strength</td>
</tr>
<tr>
<td>11</td>
<td>Structural steel</td>
<td>i) Weight/Running metre</td>
</tr>
<tr>
<td>12</td>
<td>Sand</td>
<td>i) Water absorption &amp; specific Gravity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Fineness Modulus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii) Slit Content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv) Bulk age</td>
</tr>
<tr>
<td>13</td>
<td>Water</td>
<td>i) P.H. Value for water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Chloride &amp; Sulphate content.</td>
</tr>
</tbody>
</table>
## Annexure 'B'

### Construction Material Testing & its frequency

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Material</th>
<th>Rate</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CEMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Consistency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Initial &amp; Final Setting time</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Fineness</td>
<td></td>
<td>Test per 50 MT above six tests shall be carried.</td>
</tr>
<tr>
<td></td>
<td>4) Specific Gravity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5) Soundness</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6) Compressive Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>METAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>1) Sieve Analysis (Gradation)</td>
<td></td>
<td>1 Test for every day work</td>
</tr>
<tr>
<td>b</td>
<td>Water Absorption</td>
<td></td>
<td>1 Test per 200 m³</td>
</tr>
<tr>
<td>c</td>
<td>Impact (Concrete WBM/BT)</td>
<td></td>
<td>1 Test per 200 m³</td>
</tr>
<tr>
<td>d</td>
<td>Crushing</td>
<td></td>
<td>1 Test per for Each Source</td>
</tr>
<tr>
<td>e</td>
<td>Abrasion</td>
<td></td>
<td>1 Test per for Each Source</td>
</tr>
<tr>
<td>f</td>
<td>Flakiness &amp; Elongation Index</td>
<td></td>
<td>1 Test per 200 m³</td>
</tr>
<tr>
<td>g</td>
<td>Plasticity Index for blind age used for WBM</td>
<td>1 Test per 25 m³</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SAND</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Water Absorption &amp; Specific Gravity</td>
<td>1 Test per Each Source</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Fineness Modulus</td>
<td>1 Test per Each day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Slit Content</td>
<td>1 Test per for Each day work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) Bulk age</td>
<td>1 Test per for Each day work</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>BRICKS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Water Absorption</td>
<td></td>
<td>For each 50000 No. bricks Above three test are to be carried out</td>
</tr>
<tr>
<td></td>
<td>2) Comp Strength</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Effloresce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flooring Tiles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Flexural Strength</td>
<td></td>
<td>For 2000 No. of Tiles above three tests are to be carried out</td>
</tr>
<tr>
<td></td>
<td>2) Water Absorption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Abrasion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Manglore tiles</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1) Water Absorption</td>
<td></td>
<td>1 Test- 6 Tiles per 50000 Number</td>
</tr>
<tr>
<td></td>
<td>2) Breaking Load</td>
<td></td>
<td>2 Test- 6 Tiles per 50000 Number</td>
</tr>
<tr>
<td>7</td>
<td>Glazed Tiles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Water Absorption</td>
<td></td>
<td>1 Test- 6 Tiles per 2000 Number</td>
</tr>
<tr>
<td>8</td>
<td>Concrete Mix Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compressive strength C. C. Cubes for Qty</td>
<td>1 Concrete Mix Design for each grade of concrete per every per hour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Qty. up to 5 m³</td>
<td></td>
<td>1 Set (3 Number)</td>
</tr>
<tr>
<td></td>
<td>6-15 m³</td>
<td></td>
<td>2 Set (3 No.)</td>
</tr>
<tr>
<td>Quantity Range</td>
<td>Test Quantity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-30 m³</td>
<td>3 Set (3 No.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-50 m³</td>
<td>4 Set (3 No.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity above 51 m³</td>
<td>4+1 additional set per 50 m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9 MURUM/ SOIL for earth work

1. Optimum Dry Density: 2 Test per 3000 m³
2. C.B.R.:
3. Liquid & Plastic Limit/Plasticity Index: 1 Test per 3000 m³
4. Filed Density 100% P.D.:
5. Filed Moisture Content:

### 10 WOOD

1. Moisture Content: 1 test per Source
2. Density: 1 test per Source

### 11 WATER

1. P.H. Value for Water and Sand: 1 test per Source
2. Chloride & Sulphate content: 2 test per Source

### 12 Steel

1. Wt per meter
2. Ultimate Tensile Stress
3. Yield stress
4. Elongation: One test for every 5.0 MT or part thereof for each diameter
## Annexure 'C'

**LIST OF APPARATUS REQUIRED FOR BUILDING WORK**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Name of Apparatus</th>
<th>No. (min) required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>30 m and 50 m chain/tape</td>
<td>2 No.</td>
</tr>
<tr>
<td>2.</td>
<td>Automatic levelling instrument/ Tachometer with all accessories like 5.00 metre staff</td>
<td>2 Number</td>
</tr>
<tr>
<td>3.</td>
<td>Vernier callipers</td>
<td>1 No.</td>
</tr>
<tr>
<td>4.</td>
<td>Cube moulds for concrete/ Cube moulds for cement mortar</td>
<td>6 Sets</td>
</tr>
<tr>
<td>5.</td>
<td>Silt jar for sand silt testing</td>
<td>4 Sets</td>
</tr>
<tr>
<td>6.</td>
<td>Oven—Electrically operated, thermostatically controlled, range up to 200°C.</td>
<td>1 No.</td>
</tr>
<tr>
<td>7.</td>
<td>Platform balance 300 kg capacity</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Balance 20 kg capacity—self indicating type</td>
<td>1 No.</td>
</tr>
<tr>
<td>9.</td>
<td>Electronic Balance 5 kg capacity, accuracy 0.5 gm</td>
<td>2 No.</td>
</tr>
<tr>
<td>10.</td>
<td>Water bath—electrically operated and thermostatically controlled with adjustable shelves, sensitivity 1°C.</td>
<td>1 No.</td>
</tr>
<tr>
<td>11.</td>
<td>Thermometers:—Mercury in glass thermometer, range 0°C to 250°C.</td>
<td>4 Number</td>
</tr>
<tr>
<td>12.</td>
<td>Mercury in steel thermometer with 30 cm stem, range up to 300°C</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Kerosene or gas stove or electric hot plate</td>
<td>1 No.</td>
</tr>
<tr>
<td>14.</td>
<td>Set of IS sieves with lid and pan:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>450 mm diameter, 200 mm diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63 mm, 53 mm, 37.50 mm, 26.50 mm, 13.20 mm, 9.50 mm, 6.70 mm, and 4.75 mm size</td>
<td>1 Sets</td>
</tr>
<tr>
<td></td>
<td>2.36 mm, 2.0 mm, 1.18 mm, 600 micron, 425 micron, 300 micron, 150 micron, and 75 micron</td>
<td>2 Sets</td>
</tr>
<tr>
<td>15.</td>
<td>Water testing Kit</td>
<td>1 Set</td>
</tr>
<tr>
<td>16.</td>
<td>Vicat apparatus for testing setting times</td>
<td>1 Set</td>
</tr>
<tr>
<td>17.</td>
<td>Compression and Flexural strength testing machine, 200 tonne capacity with additional dial for flexural testing.</td>
<td>1 No.</td>
</tr>
<tr>
<td>18.</td>
<td>Chloride and Sulphate Kit</td>
<td>2 No.</td>
</tr>
<tr>
<td>19.</td>
<td>Moisture Content Jar</td>
<td>1 No.</td>
</tr>
</tbody>
</table>
**ADDITONAL SPECIFICATIONS**

The contractor shall achieve that following requirements in respect of quantity of work and his contract rate shall provided for the same.

1.1 **ADMIXTURES:-**

Whenever necessary the admixture should be used to achieved the required workability. The type of admixture should be got approved from Engineer-in-charge. The rate is inclusive of all admixtures etc. if found necessary.

1.2 **CEMENT CONCRETE IN CONCRETE:**

For this purpose the conditions mentioned in additional specifications on Page 115 to 121 shall be applicable.

1.3 **WATER / CEMENT RATIO:**

For high quality concrete of low permeability, the water/cement ratio shall not be more than 0.45 and preferably 0.40 or less subject to the attainment of adequate workability.

1.4 **CURING FOR CONCRETE:**

Special attention shall be paid to curing of concrete in order to ensure maximum durability and no minimize cracking. Concrete shall be cured with fresh water whenever it is possible to ensure that the concrete surface can be kept wet despite wind, etc. care shall be taken on avoid rapid lowering of concrete temperatures caused by applying cold water to hot concrete surface (thermal shock) Sea water shall not be used for curing reinforced concrete or prestressed concrete. Where there is doubt about the ability to keep concrete surface permanently wet for the whole of the curing period heavy duty membranes curing compound shall be used.

1.5 **CONCRETE COVER TO REINFORCEMENT:**

(i) The cover concrete must be of the same quality, impermeability and strength as the rest of the concrete. Special mix design should be carried out for the concrete to be used for making concrete cover blocks.

(ii) The concrete cover must develop sufficient alkalinity, and protect the steel. The alkalinity developed shall not be less than 0.04 N and shall not more than 0.08 N.

(iii) The cover must be uniform throughout and it's thickness shall be exclusive of plaster or other decorative finishes.

(iv) The concrete cover shall be as per the relevant clause of IS codes. In the case of poles the cover thickness shall be separately decided by the Engineer in charge.

(v)

1.6 **DETAILING OF MISCELLANEOUS ITEM:**

**Binding Wires:** All ends of binding wires shall be carefully turned inwards so that they do not project out of concrete and start rusting action. Plastic coated galvanised wires shall be used. Wherever possible polythene binding string and polythene bar grips shall be used, after making
sure that these do not result in loss of bond or chemical reaction with concrete. The use is subject to approval of Engineer-in-charge.

1.7 **BAR SPACING**: As per relevant I.S. codes and as detailed design drawing or as directed by Engineer-in-charge.

1.8 **HOLLOWS IN CONCRETE**: After concreting is complete the concrete surface particularly where there is congestion of reinforcement, shall be tested by light hammering or if possible by Schmitz hammer. Any portion showing signs of hollowness should be grouted immediately.

**SPECIFICATION FOR FORMWORK AND STEEL, CENTERING**: -

1) **FORMWORK**:-
   1.1 Formwork: - Formwork shall include all temporary forms of moulds required for forming the concrete which is cast-in-situ, together with all temporary construction required for their support. Unless otherwise stated all formwork shall conform to I.S. Specification.

   1.2 Design of Formwork: - Formwork including complete false work shall be designed by the contractor in accordance with I.S.: 2750 (1964), 4041 (1987) and all other relevant I.S. codes without any extra cost to the Government and these shall be got approved from Engineer before any formwork is taken up.

   1.3 The contractor shall entirely be responsible for the adequacy and safety for false work notwithstanding any approval or review by the Engineer of his drawing and design. Proprietary system of formwork if used a detailed information shall be furnished to the Engineer for approval.

2. **QUALITY OF SHUTTERING**: The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement slurry.

   2.1 Ply-board shuttering materials to be used shall be steel shuttering/marine plywood well seasoned free from projecting nails, splits or other defects that may mark on the surface of concrete. It shall not be so dry as to absorb water from concrete, or so green or wet as to shrink after erection. Mild steel plates or plywood shall be used for slab and beam bottoms.

   2.2 The timber shall be accurately spawned planed on the sides and the surface coming in contact with concrete.

   2.3 So far as practicable, clamps shall be used to hold the forms together. Where use of nails is unavoidable minimum number of nails shall be used and these shall be left projecting so that they can be easily with drawn. Use of double headed nails shall be preferred.

3. **TOLERANCE**: -

   3.1 The formwork shall be made so as to produce finished concrete true to shape, lines, levels plumb and dimensions as shown on the drawings, subject to the following tolerance unless otherwise specified in these documents or drawings or as directed by the Engineer:

   a) Section dimension = 5 mm
b) Plumb = 1 in 1000 of height  
c) Levels = 3 mm before any deflection takes place.

3.2 Tolerance given above are specified for local aberrations in the finished concrete surface and should not be taken as tolerance for the entire structure taken as a whole or for the setting and alignment of formwork which should be as accurate as possible to the entire satisfaction of the Engineer. Errors if noticed in any lift/tilt of the structure after stripping of forms, shall be corrected in the subsequent work to bring back the surface of the structure to its true alignment.

4. SPECIAL PROVISION: - Whenever the concreting of thinner members is required to be carried out within shutters of considerable depth, temporary openings in the side of the shutters shall, if so directed by the Engineer be provided to facilitate the poring and consolidation of the concrete. Small temporary openings shall be provided as necessary at the bottom of shutters of walls and deep beams to permit the expulsion of rubbish etc.

5. REMOVAL OF FORMWORK: - The formwork shall be so removed that it shall not cause damage to concrete. Centring shall be gradually and uniformly lowered in such a manner as to avoid any shock or vibrations. Supports shall be removed in such a manner as to permit the concrete to take stresses due to its own weight uniformly and gradually.

The whole of the formwork removal should be planned and definite scheme of operation shall be worked out. Under no circumstances forms be struck until the concrete reaches a strength of at least twice the stress to which the concrete may be subjected at the time of striking but not before the period as mentioned in IS:456-2000 where ordinary Portland cement is used.

II) STEEL CENTERING:-  
1. Work include: - Erecting steel centring with contractor's material comprising of standard steel adjustable props and standard steel trusses / joists / spans, centring place for bottom of slab and steel plates for bottom of beams etc. of adequate strength properly balanced for obtaining adequate rigidity to with stand all loads coming on it including permanent and temporary fixtures and fastenings etc complete for R.C.C. member like beams slabs and canopy including its removal after the specified period, stacking making good the damaged parts / its replacement before its next use with all leads and lift (all centring material shall be contractor.)

2. For R.C.C. works formwork shall be of marine plywood of adequate thickness and grade only. The centring and supporting arrangement such as standard steel trusses/ joists/ spans standards adjustable/ fixed props. H type frames etc shall be designed by the Contractor and approved from the Engineer before commencement of its erection. The Contractor with the prior approval of the Engineer shall use standard steel centring arrangement which may be manufactured by the reputed firm.
3. The supporting arrangement designed by the contractor shall conform to the relevant I.S. code and Standard practice adopted in this type of work. The centring arrangement shall be adequately braced and properly secured by using appropriate type of fastenings and fixtures to ensure stability and rigidity of the centring to withstand all loads coming on it. The entire responsibility for design, erection, maintenance and safety etc. will exclusively rest with the contractor. The Engineer reserves right to call detailed design calculations of the entire centring or part thereof to verify its stability and also reserve right to reject entire centring arrangement or part thereof and any material used for the centring in the event of which the contractor shall have to arrange for its replacement at his own cost.

**SPECIFICATIONS FOR CONCRETE WORKS:-**

1. **DESIGN OF CEMENT CONCRETE MIXES:**
   a) All the cement concrete of grade M-15 and higher strength shall be done with proper mix design as per IS: 10262 - 1982 and shall confirm to the durability and other requirements of IS 456 2000. The mix design shall be got approved from the Executive Engineer from time to time whenever there is change in the source and type of cement and aggregates and change in the gradation of aggregates.
   b) The design of concrete mixes for various concrete items in the work shall be obtained by the contractor at his cost from and approved laboratory. The contractor shall submit in advance details of such design to the Engineer-in-charge for his prior approval.
   c) For concrete of Grade M-25/ M-30/M-35.
      Preliminary mix design must be carried out from an approved laboratory, for subsequent changes field mix design shall be acceptable. However in case the Executive Engineer has got difficulty in acceptance of the field mix design, laboratory mix design shall be got done by the contractor from approved laboratory at his own cost. Cement, fine aggregate and coarse aggregate must be used by weight only according to the requirement of the approved mix design.
   d) The concrete mix design shall give target strength of 1.33 times the working strength.
   f) The provision of the specification No. B-7 at page - 38 to 40 of Vol. 1 1979 Edition of standard specification book for controlled concrete shall be applicable for all the structural concrete items. The maximum water cement ratio shall be 0.45. The mix design shall be done accordingly.
   g) All the expenses of preliminary mix design, subsequent field/ laboratory mix design, work tests, shall be borne by the contractor.
2. **FROMWORK FOR CONCRETE WORK:** - The forms of concrete shall be of the materials as directly by the Executive Engineer-in-charge and shall preferably be of steel or plywood. Forms shall be of the required shape, profile and lines. Suitable devices shall be used to hold corners, adjacent ends, edges of panel or other forms together in accurate alignment. The forms and joints shall tight enough. Forms used for circular curved or structures of unusual shape, petal dome etc. shall be of such a character that will result in smooth concrete surface and exact shape. They shall be prepared such that they will not warp or distort during erection or while placing concrete. Their design and layout shall be got approved form the Executive Engineer-in-charge in advance.

3. **ERECTION AND REMOVAL OF FORM WORK:** - The centring and strutting shall be of steel or plywood board exclusively for concreting. The design and drawing should be got approved in advance from the Department. For minor members the Engineer-in-charge may, at his discretion, permit use of wooden shuttering. The centring and shuttering shall be close and tight to prevent leakage of cement slurry. The centring shall have the necessary props, bracing and edges sufficiently strong and stable which shall not yield or displace while or after lying of concrete. They shall be made in such way that they can be slackened and removed gradually and slowly without distributing the concrete. Centring and shuttering shall not be removed before the design strength is achieved.

4. **MIXTURE OF CONCRETE:** - Design mix concrete as well as nominal mix concrete shall be mixed by following the provision in Standard specification at B. 6.4 unless otherwise directed by the Engineer.

   Unless otherwise agreed by the Engineer concrete shall be mixed in a batch type mixer of such other type of mixer as the Engineer my approve.

   During hot weather the Contractor shall ensure that the constituent materials are sufficiently cool to prevent the concrete from stiffening in the intervals between its discharge from the mixer and its final position.

5. **TRANSPORTATION, PLACING AND COMPACTION OF CONCRETE:** - The method of transportation placing and compaction of concrete shall be followed as per section B.6.6, 6.7 and 6.8 of Standard Specification unless otherwise directed by the Engineer. The compaction shall be done with surface float vibrators for slabs and with pin vibrators for columns and beams. Vibrators of adequate vibrating capacity shall be employed for all types of works.

6. **CURING:** - Curing shall be done by following provision of Section B.6.9 of Standard Specification and as directed by the Engineer.
7. **WORKING IN EXTREME WEATHER:** During windy weather sufficient protection shall be provided to prevent the cement from being blown away during the process of proportioning and mixing. During wet weather, the concrete shall be adequately protected as soon as it is placed in position.

No concreting shall be carried out during period of continuous heavy rains unless, it is completely covered during mixing, transporting and placing. In extreme hot weather, concreting shall be restricted to morning and evenings. The time between mixing and placing of concrete shall be kept to the minimum and formwork shall be cooled by sprinkling with water.

8. **FINISHING:** Finishing work shall comply with requirement of section B.6.10 of Standard Specification unless otherwise specified herein below:

Immediately on removal of forms, the R.C.C. work shall be examined by the Engineer before any defects are made good.

a) The work that has sagged or contains honey combing to an extent detrimental to structural safety or architectural concept shall be rejected.

b) Surface defects of a minor nature shall be rectified generally as indicated below by the contractor.

i) Surface defects which require rectification when forms are removed usually consist of bulges due to movement of forms, ridges at form joints, honeycombed areas, damage resulting from the stripping of forms and bolt hole. Bulges and ridges shall be removed by careful chipping or tooling and the surface is then rubbed with a grinding stone. Honey combed and other areas shall be chipped out, the edges being cut as straight as possible and perpendicular to the surface, or preferably slightly under cut to provide a key at the edge, of the patch. Bolt holes shall be closed by cement mortar to ensure thorough filling.

ii) Shallow patches shall be treated with a coat of thin grout composed of one part of cement and one part of sand and then filled with mortar similar to that used in concrete. The mortar is placed in layers not more than 10 mm thick and each layer shall be given a scratch finish to secure bond with the succeeding layer. The last layer shall be finished to match the surrounding concrete by floating, rubbing or tooling on formed surfaces by pressing the form material against the patch while the mortar is still plastic.

iii) Large and deep patches requires filling up with concrete held in place by forms. Such patches shall be reinforced and carefully dowelled to the hardened concrete.

iv) The same amount of care to cure the material in the patches shall be taken for the whole structure. Curing shall be started, as soon as possible after the patch is finished.
to prevent early drying. Damp Hessian cloth may be used. But in some locations it may be difficult to hold it in place, a membrane curing compound in these cases will be most convenient.

9. **CONSTRUCTIONS JOINTS:** Construction joints shall be provided and treated following the provisions of Specification and as directed by the Engineer-in-charge.

10. **DURABILITY:** Minimum cement contents for different exposures and sulphate attack are given in Tables 4 and 5 of I.S. 456, 2000 shall be followed for design mix.

11. **TESTS AND STANDARD OF ACCEPTANCE:**
   11.1 Tests and Standard of acceptance criteria of design mix concrete and nominal mix concrete shall be as follows:
       Sampling and testing of Concrete shall be done as per provision of section B.6.12 of Standard Specifications. Acceptance criteria for strength of concrete shall be as per IS 456-2000. Case falling outside the above limit shall be examined by the Engineer on Merits in each case.
   11.2 **DEFECTIVE CONCRETE:** Any concrete which gives substandard results, or is severely damaged due to cracking or shows excessive honey combing and exposure of reinforcement, if exhibits any fault which in the opinion of the Engineer, seriously impairs its function, may be declared as defective concrete. Such non acceptable concrete shall be removed from the site and replaced by fresh concrete of the specified quality by the contractor at his own expenses. Alternatively in case of acceptable concrete, the Contractor shall carry out whatever other remedy the Engineer may reasonably suggest "Small rendering shall be done by the Contractor without extra cost."

12. **KEEPING RECORDS:** The record of mix design, mixing, slump, testing of C.C. cubes etc. shall be maintained in accordance with Section B-6.13 of the Standard Specification.
QUALITY ASSURANCE AND MAINTENANCE

To ensure the specified quality of work which shall also include necessary surveys, temporary works etc., and the contractor shall prepare a quality assurance plan and get the same approved from the Engineer in charge within eight days from the date of work order. For this, contractor shall submit an organization chart of his technical personnel to be deployed on the work along with their qualification, job descriptions defining the functions of reporting, supervising, inspecting and approving. The contractor shall also submit a list of tools, equipment’s and the machinery and instrumentation which he proposes to use for the construction and for testing in the field and/or in the laboratory and monitoring. The contractor shall modify/supplement the organization chart and the list of machinery, equipment etc. as per the direction of the Superintending Engineer and shall deploy the personnel and equipment on the field as per the approved chart and list respectively. The contractor shall submit written method statements detailing his exact proposals of execution of the work in accordance with the specifications. He shall get these approved from the Engineer in charge. The quality of the work shall be properly documented through certificates, records, check-lists and logbooks of results etc. Such records shall be compiled from the beginning of the work and be continuously updated and supplemented and this shall be the responsibility of the contractor. The forms should be got approved from the Executive Engineer-in-charge.

The contractor shall prepare detailed completion drawings after completion of the work. He shall also prepare and submit a maintenance manual giving procedure for maintenance, with the period of maintenance works including inspections, tools and equipment to be used, means of accessibility for all parts of the structure. He shall also include in the manual, the specifications for maintenance work that would be appropriate for his design and technique of construction. This manual shall be submitted within the contract period.
3 Agenda and work order book

3.1 The Contractor shall himself manage the work or engage an authorized all time agent on the work capable of managing supervising and guiding the work and understanding the specifications and contract conditions. A qualified and experienced engineer be provided by the Contractor as his agent for technical matters in case the Engineer-in-charge considers this as essential for the work and so directs the Contractor. Agent will take orders as will be given by the Engineer-in-charge or his representative and shall be responsible for carrying them out. The agent and/or site engineer shall not be changed without prior intimation to the Engineer-in-charge or his representative on the work site. The Engineer-in-charge has the unquestionable right to ask for changes in the quality and strength of Contractors supervisory staff and to order removal from work of any of such staff. The Contractor shall comply with such order and effect replacements to be satisfaction of the Engineer-in-charge.

3.2 A work order book shall be maintained on site and it shall be the property of Government and the Contractor shall promptly acknowledge the order given therein by the Engineer-in-charge or his authorized representative or his superior officer and comply with them. The compliance shall be reported by Contractor to the Engineer-in-charge within 15 days from the date of issued of instructions. The blank work order book with machine numbered pages in quadruplicate with perforated sheets (for three copies to be detached) will be provided by the Departments for this purpose. The Contractor will be allowed to copy out the instructions therein from time to time.

4 Land for temporary use

Land for temporary site office, site laboratory, parking yard, store yard, labour camp, Workshop etc. shall have to be arranged by the Contractor at his own cost. The department will extend help by providing recommendation letter etc. if necessary and so desire by the Contractor.

5 Assistance in procuring priorities permits etc.

5.1 The Engineer-in-charge on written request by the Contractor, will if in his opinion the request is reasonable and in the interest of work and its progress assist the Contractor in securing the police protection and the priorities for deliveries, transport permits for controlled materials, permits for quarries and other similar permits including labour license etc. where such are needed. All cost in this behalf shall be borne by the Contractor. The department will not however be responsible for the non-availability of such facilities or delays in this behalf and no claims on account of such failure or the Department shall allow delays.

The Contractor has to make his own arrangement for machinery required for the work. However if such machinery is conveniently available with the department it may be spared on hire as per department’s rules in force, if requested by the Contractor in writing. The supply or non-supply of machinery shall not form a ground for any claim or extension of time limit for this work.

5.2 Water supply

i) Availability of adequate water for work and sources thereof shall be confirmed by the Contractor before submitting the tender.
ii) Water for construction, curing or any other purpose shall be brought by the Contractor at his own cost.

5.3 Electricity

The Contractor will have to make his own arrangement at his own cost for obtaining or providing electric supply at Work site. Electrical supply for the department’s use at work site shall be provided by the Contractor. No charges would be payable by the Department.

5.4 Telephone Facilities

Contractor will have to make his own arrangement at his own cost of telephone facilities at work site, if required.

6 Quarries

The Contractor will have to make his own arrangement of acquiring land for quarries. The Contractor shall carry out all quarrying operations without endangering the environment and natural beauty of surrounding. All excess and unuseful excavated materials shall be stacked at dumping places if available identified by the Department as directed by the Engineer-in-charge otherwise the Contractor has to make his own arrangement for the same.

Supervisory staff

The Contractor shall at his own expenses maintain sufficient experienced supervisory staff etc. required for the work and shall make his own arrangement for housing such staff.

8 Co-ordination

When several agencies for different sub Works of the project are to work simultaneously on the project site, the Contractor shall render full co-ordination for achieving proper co-ordination between different Contractor to ensure timely completion specified in each contract shall therefore be strictly adhered to each Contractor may make his independent arrangements for water power, housing etc. but he will be at liberty to come to mutual agreement with the approval of the Engineer-in-charge. The Contractor shall not take or cause to be taken any steps of action that may cause disruption, discontent or disturbance to work, labour or other arrangements etc. of other Contractors in the project localities. Any action by the Contractors which the Engineer-in-charge in his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the contract conditions and shall be dealt with accordingly. In case of any dispute or disagreement between the various Contractors, the Engineer-in-charge’s decisions regarding the coordination, co-operation and facilities to be provided by any of the Contractor shall be final and binding on the Contractor concerned and such a decision or decision shall not violate any contract nor absolve the Contractor of his obligations under the contract, nor form the ground for any claim or compensation.
9  **Relation with public authorities**

The Contractor shall comply with all rules, regulations, by laws and directions given from time to time by any local or public authority or body in connection with this work and shall him self pay fees or charges which are livable on him without any extra cost to Government.

10  **Work preliminaries**

The Contractor shall supply, fix and maintain at his own cost, during the execution of Works, all the necessary centering and scaffoldings, staging, planking, timbering strutting, shoring, plumbing, fencing hoardings, watering, lightening by night as well as the necessary equipment for protection of public and safety at any place adjacent to road and railway line. The Contractor shall remove any/or all such centering, scaffolding, staging, planking and equipment when ordered to do so by the Engineer-in-charge and make good all matters and things disturbed during the execution of work to the satisfaction of the Engineer-in-charge.

11  **Environmental Safeguards**

11.1  **NOC for pollution control**

It is obligatory on the part of agencies to obtain the N.O.C. regarding Water (Prevention and control of pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981 from the Maharashtra Pollution Control Board before starting Crusher/Hot Mix Plant for the work.

11.2  **Environmental Safety**

The Contractor shall, throughout the part of agencies to obtain the N.O.C. regarding Water (Prevention and control of pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981 from the Maharashtra Pollution Control Board before starting Crusher/Hot Mix Plant for the work.

12.0  **Arrangement for traffic during construction**

The Contractor shall at all time carryout work on the highway in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all the Works involving improvements to the existing highway, the Contractor shall in accordance with the directives of the Engineer, provide and maintain, during execution of the work, a passage for traffic either along a part of the existing carriageway under improvement. The Contractor shall take prior approval of the Engineer regarding traffic arrangements during construction in reference with drawing No. 2 & 3 on page 51 & 52 of Vol-II of Standard Contract Document.

**B. Execution of Work**

13  **Authorities**

13.1  **Authorities of Engineer-in-charge**

13.1.1  Save in so far as it is legally or physically impossible the Contractor shall execute complete and maintain the Works in strict accordance with the contract under the directions and to the entire satisfaction of the Engineer-in-charge and shall comply with and adhere strictly to the Engineer-in-charge’s instructions and directions on any matter (whether mentioned in the Contract or not) pertaining to this Work.
13.1.2 The Engineer-in-charge shall decide all questions which may arise as to quality and acceptability of materials furnished and work executed, manner of execution rate of progress of the work, interpretation of the plans and specifications and acceptability of fulfillment of contract to on the part of Contractor. He shall determine the amount and quantities of work performed and materials furnished and his decision and measurements shall be final. In all such matters and in any technical questions, which may arise touching the contract, his decision shall be binding on the Contractor.

13.1.3. The Engineer-in-charge shall have the power to enforce such decisions and orders if the Contractor fails to carry them out promptly. If the Contractor fails to execute the work ordered by the Engineer-in-charge, the Engineer-in-charge may give notice to the Contractor specifying a reasonable period therein and on the expiry of that period proceed to execute such work as may be deemed necessary and recover the cost thereof from the Contractor.

13.2 Authorities of the Engineer-in-charge’s Representative

13.2.1 The duties of the representative of the Engineer-in-charge are to watch and supervise the work and to test and examine the materials to be used for workmanship employed in connection with the work.

13.2.2 The Engineer-in-charge may from time to time in writing delegate to his representative any of the powers and authorities vested in the Engineer-in-charge and shall furnish to the Contractor a copy of all such delegations of powers and authorities.

13.2.3 Any written instruction of approval given by the representative of the Engineer-in-charge to the Contractor within the terms of such delegations (but not otherwise) shall bind the Contractor and the department as though, it had been given by the Engineer-in-charge, provided always as follows:

a) Failure of the representative of the Engineer-in-charge to disapprove any work or materials shall not prejudice the power of the Engineer-in-charge thereafter to disapprove such work or materials and to order its putting down, removal or breaking up thereof.

b) If the Contractor is dissatisfied with any decision of the representative of the Engineer-in-charge, he shall be entitled to refer the matter to the Engineer-in-charge who shall thereupon confirm, reverse or vary such decision.

14 Work Preliminaries

14.1 Display of Work Information
The two information sign boards in rectangular shape of size 2.45 x 1.2 0m made out of 3mm thick Aluminum sheet painted with one coat of zinc chromate staving primer and two coats of yellow stove enamel paint on front side and gray stove enamel paint on back side and border/messages/symbols etc. with cutout of while retro reflective sheeting of Engineering Grade including M.S .angle iron frame of 35 x 35 x 3mm and two M.S. angle iron post of size 65 x 65 x 6mm properly cross braced with angle iron of 50 x 50 x 5mm etc. duly painted with alternative black and white bands of 25cm in width including G.I. fixtures etc. and fixing the board in 1:4:8 concrete block of size 60 x 60 x 75 cm shall be fixed etc. and fixing the boards in 1.4.8 concrete block of size 60 x 60 x 75 cm shall be fixed on the site (each on one side). It
is incidental to the Work and no extra payment will be made to the Contractor.

14.2 **Omissions and Discrepancies**

In case of errors omissions and/or disagreement between written and scaled dimension in drawings, or between the drawings and specifications etc. the following order of preference shall apply.

i) Between the actual scaled and written dimension or descriptions on a drawings the latter shall be adopted

ii) Between the written or shown description or dimension in the drawing and the corresponding one in the specifications, latter shall apply.

iii) Between the quantities shown in the schedule of quantities and those arrived at from the drawing the latter shall apply.

iv) In case of omissions and/or doubts or discrepancies in dimension or description of any item or specifications a reference shall be made to the Engineer-in-charge whose elucidation, elaboration or decision shall be considered as authentic. The Contractor shall be held responsible for any error that may occur in the work through lack of such reference and precaution.

14.3 **Temporary Diversions, Maintenance of Same and Traffic Management**

In addition to provision made herein, it is stipulated that the Contractor shall construct, maintain and carry out the traffic management including the safety features, for all temporary diversions.

14.4 **Site office**

The Contractor shall, for the purpose of supervision of Works & management of work schedule establish fully furnished site office having required floor area & amenities at the place as approved by the Engineer-in-charge. The Contractor shall provide the furniture as per the list as per MORT&H specification (fifth revision) Clause No. 120 as below.

**LIST OF FURNITURE TO BE PROVIDED & MAINTAINED FOR ENGINEER’S SITE OFFICE**

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<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>Executive Table (for the Engineer)</td>
<td>Make Godrej Model No. T-108 or equivalent</td>
<td>1 No.</td>
</tr>
<tr>
<td>2</td>
<td>Executive Chair (for the Engineer)</td>
<td>Make Godrej Model No. PCEH-701 or equivalent</td>
<td>2 No.</td>
</tr>
<tr>
<td>3</td>
<td>Table (for site Engineer, Accountant and Head Clerk)</td>
<td>Make Godrej Model No.104/ or equivalent</td>
<td>4 No.</td>
</tr>
<tr>
<td>4</td>
<td>Ordinary chair type 1 (for Engineer, Accountant and Head Clerk and visitors)</td>
<td>Make Godrej Model No.CHR-6 or equivalent</td>
<td>6 No.</td>
</tr>
<tr>
<td>5</td>
<td>Table (for all other staff)</td>
<td>Make Godrej Model No. T-101 or equivalent</td>
<td>2 No.</td>
</tr>
<tr>
<td>No.</td>
<td>Item Description</td>
<td>Details</td>
<td>No.</td>
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</tr>
<tr>
<td>6</td>
<td>Ordinary chair Type II (for all other staff and visitors)</td>
<td>Make Godrej Model No.CHRI-6 or equivalent</td>
<td>2 No.</td>
</tr>
<tr>
<td>7</td>
<td>Steel Cupboard 1980 mm x 915 mm x 485mm</td>
<td>Make Godrej Model No.1 Store wel plain or equivalent</td>
<td>4 No.</td>
</tr>
<tr>
<td>8</td>
<td>Steel Cupboard 1270 mm x 765mm x 440mm</td>
<td>Make Godrej Model Minor plain or equivalent</td>
<td>4 No.</td>
</tr>
<tr>
<td>9</td>
<td>Racks – 5 Tier 1800 mm x 900 mm x 375 mm</td>
<td>Made of slotted angles and M.S. sheets of Godrej make</td>
<td>4 No.</td>
</tr>
<tr>
<td>10</td>
<td>Water Cooler</td>
<td>Standard Make</td>
<td>1 No.</td>
</tr>
<tr>
<td>11</td>
<td>Air Cooler</td>
<td>Standard Make</td>
<td>4 No.</td>
</tr>
<tr>
<td>12</td>
<td>Ceiling Fans 1400 mm size</td>
<td>Ceiling fan shall be of approved</td>
<td>6 No.</td>
</tr>
<tr>
<td>13</td>
<td>Computer with Laser Printer</td>
<td>Dual Core -2 with all latest Hardware</td>
<td>2 No.</td>
</tr>
</tbody>
</table>

14.4 (A) FACILITIES.

14) Contractor should provide at his own cost, temporary site office in the form of A.C.Pota cabin with all required furniture cupboards etc including two computer, with internet facility colour printer, scanner for Govt. Engineers which will belong to contractor, after completion of project contractor may take out his property at his own.

15) During construction necessary precaution should be taken by contractor for security of the plot from enforcement dumping of debris etc..

16) Contractor should provide at his own cost, CCTV Camera system with 24 hour recording and internet facility. All required access and password should provided to PWD officials for monitoring project activities.

For road and bridge works the site office will have to be established on Work Site only.

14.5 Laboratory for Testing

The Contractor shall for the purpose of testing the materials establish a field laboratory of adequate floor area as approved by Engineer-in-charge. The Contractor shall provide all equipments and amenities as per the details mentioned in MORT& H specification clause No. 121.3.1

Note: The field laboratory shall either be established at plant Site or as directed by Engineer-in-Charge.

14.6 The Contractor will make arrangements to carry out various tests in the field laboratory established for this purpose. The 70% sample could be tested at the field laboratory and 30% samples shall be got tested in the Government laboratory or laboratory approved by the Engineer-in-charge. The charges of testing the material in Government or Government approved laboratory or recognized laboratory approved by Engineer-in-charge shall be borne by the Contractor only.

14.7 The material for which test can not be carried out at the field laboratory shall be tested at the Government laboratory approved by the Engineer-in-charge. The material which can not be tested at Government laboratory shall be tested at the recognized laboratory approved by the Engineer-in-charge in presence of the Engineer-in-charge or his authorized representative.

15. Materials for use on Work

15.1 General

15.1.1 The Contractor shall make his own independent investigations into the availability as well as suitability of the various materials required for construction.

15.1.2 The Contractor will have to make his own arrangement for procuring quarries or quarry permits. Necessary assistance for this will be extending by the Department if
desired.

15.1.3 All the material required for construction of work shall be brought by the Contractor at his own cost. The samples of material to be procured shall be got approved from the Engineer-in-charge. The material as per approved samples shall only be procured.

The Contractor shall submit periodically as well as on completion of work, an account of all materials brought by the Engineer-in-charge. The Contractor shall also furnish monthly account of materials. A separate register shall be maintained on Site for recording daily item wise receipt and consumption of cement, steel and bitumen used by him and item wise consumption of other materials used. This register shall be signed daily by the Contractor or his representative and representative of Engineer-in-charge.

15.1.5 The Contractor shall not transfer any material once brought at Work site without prior written permission from Engineer-in-charge and for bonafied reasons only.

15.1.6 Testing of all construction material shall be carried out as per required frequency and MORT & H specification clause No.903.3.1, 1000, 1600, 1700, 1900, 2200, 2700.

15.1.7 In case the materials brought by the Contractor become surplus owing to the change in the design for the work the materials should be taken back by the Contractor at his own cost after prior permission of the Engineer-in-charge.

15.1.8 The charges for conveyance of materials from the place of delivery to the site of work and the actual spot on work site shall be entirely borne by the Contractor. No claim on this account shall be entertained.

15.2 Cement

15.2.1 The Contractor shall make his own arrangement for procurement of Cement required for the Work. The Cement shall be OPC Grade-43 conforming to IS 8222. The supply of cement shall be of brand approved by Engineer-in-Charge. The testing of cement so procured shall be carried out as per the frequency as mentioned in MORT & H specification clause No.1000. The testing charges will have to be borne by the Contractor.

15.2.2 Cement to be used on Works shall be as fresh as possible and shall be used as per I.S. Code from the date of manufacture.

15.3 Bitumen

15.3.1 Contractor shall procure and use bitumen of required grade from Government refinery.

15.3.2 Bitumen to be procured by Contractor shall conform to the IS 73-1992.

15.3.3 Contractor should be aware that delay may occur in getting the bulk bitumen to be supplied at the refinery. The Contractor therefore is advised to place indent for their requirement sufficiently in advance to allow for the period usually taken by the refinery for supplying bulk bitumen.

15.3.4 The Contractor is expected to know all the rules and regulations framed by the refineries for supply of bitumen.

15.3.5 The Contractor shall have to submit attested copy or original purchase voucher duly supported by delivery challan & exit gate pass. The bitumen brought by the Contractor for the work will be open to check by the Engineer-in-charge or his representative at all times.

15.3.6 The Engineer-in-charge reserves the right of weight of individual random buzzer as and when considered necessary at the cost of the Contractor.

15.3.7 The bitumen so procured will have to be tested as per the frequency as mentioned in MORT & H specification (Fourth revision) clause 903.3.1. The testing charges will have to be borne by the Contractor.

15.3.8 The Contractor should inform the schedule of arrival of boozers to the Engineer-in-charge from time to time. The Contractor shall also arrange to provide field laboratory at plant site along with all necessary equipment & materials for testing the grade of bitumen procured by him.
15.4 Bitumen’s Mixes.
(i) The bituminous wearing surfaces and other bituminous overlays as directed by the Engineer-in-charge will have to be executed as per the job mix formula based on mix design. The Contractor will have to inform the Engineer-in-charge in writing at least 20 days before the start of work of the job mix formula proposed for use in the Works. While establishing the job mix formula the Contractor should ensure that it is based on correct and truly representative samples to the materials that will actually be used in the work and that the mixture and its different ingredients satisfy the physical and strength requirement of these specifications.
(ii) The job mix formula will have to be got approved from the Engineer-in-charge.
(iii) The approved job mix formula shall remain effective unless and until revised job mix formula is approved. Should a change in the source of material be proposed or when specified by the Engineer-in-charge, a new job mix formula be prepared and submitted for approval. On approval of the job mix formula the Contractor should carry out plant trials to establish that the plant is set up to produce a uniform mix conforming to the approved job mix formula. The permissible variations as regards a) Individual percentages of various ingredients and b) Binder content shall be as specified in MORT & H specification Revision V Table 500-7 & 500-18. The job mix design shall be carried out in the Regional Laboratory or any other approved laboratory as approved by Engineer-in-charge.

15.5 Cement Concrete
15.5.1 The Contractor shall carry out all preliminary tests to work out grading and proportioning of aggregates in order to obtain and maintain uniform quality of work. The Contractor shall supply all materials, labour for preparing and testing samples as required by the Engineer-in-charge Unless otherwise specified in the detailed itemwise specifications. The concrete cube shall be tested as per CI. 1716.2.4 The contractor shall also make field arrangements for slump test and bulking of sand. The frequency of test as per Ministry’s specification. The cubes shall be got tested as approved laboratory and the test results shall conform to the M.O.R.R.T. & H specifications (4th Revision) Clause No.1716.2.6 or as laid down in the specifications.

15.2.2 a) All concrete shall be machine mixed, either in a concrete mixer or in a batching and mixing plant as per specifications. No. hand mixing will be permitted. The mixer or the plant shall be be at an approved location considering the proportions of the mixes and transportation means available with the Contractor.
b) For Controlled or High grade concrete, the grading of aggregate shall be got approved from the Engineer-in-Charge. The correct proportions and the total quantity of water for the mix will be determined b means of preliminary test and shall be got approved from the Executive—in—Charge. However, such approval does not relive the Contractor from his responsibility regarding the minimum strength requirements for Work. Test shall be taken in accordance with relevant codes and specifications

15.5.3 Concrete shall meet with any other requirements as specified on the drawings or as directed be Engineer-in-charge. Additional requirements as regards overall limits of deleterious substances in concrete shall be as per M.O.R.T. & H specifications (Fifth Revision) Clause No.1704.4

15.5.4 The Concrete shall be mechanically vibrated for proper water from 28 days after the time of its placement or as may be directed by the Engineer-in-charge. Alternate method of curing viz. steam curing, use of curing compound shall be got approved from Engineer-in-charge in writing before its application.
15.3 **Cement- for B.C.**
Cement to be used for the work shall comply of the following with the prior approval of Engineer-in-charge. Ordinary Portland Cement 43 grade only confirming to IS: 8112 shall be used in the item of B.C. as a filler and shall be from the same factory. Independent testing of cement used shall be done by the Contractor at site and in the laboratory approved by the Engineer-in-charge before use. Any cement with lower quality than those shown in manufacture’s certificate shall be debarred from use.

16 **Patented devices**
Whether the Contractor desired to use any designed device, material or process covered by letter of patent or copy right, the right for such use shall be secured by suitable legal arrangement and arrangement with patent owner and the copy of their agreement shall be field with the Engineer-in-charge if so desired by the latter.

17. **Rejection of Material**
17.1 Any stock or batch of material(s) of which sample(s) does not conform to the prescribed test and quality shall be rejected by the Engineer-in-charge or his representative and such material(s) shall be removed from the site by the Contractor at his own cost. Such rejected material shall not be made acceptable by any modifications.

17.2 Material not corresponding in character and quality with approved samples will be rejected by the Engineer-in-charge or his representative and shall be removed from site by the Contractor at his own cost.

18. **Stacking, Storage & Guarding of Materials**
18.1.1 The stacking and storage of materials at site at shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and fitness for the work. Suitable precautions shall be taken by the Contractor to protect against atmospheric actions, fire and other hazard.

18.1.2 The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likelihood of subsidence of soil; heavy materials shall be stored on paved platforms. Suitable separating barricades and enclosures as directed by Engineer-in-charge shall be provided to separate various materials brought by Contractor.

18.2 The Contractor shall at his own expenses, engage watchmen for guarding the materials, plant, machinery and the work during day and night against any pilferage or damage and also for prohibiting trespassers.

18.3 No materials brought to the site shall be removed from the site without the prior approval of the Engineer-in-charge.

18.4 All constructional plant, provided by the Contractor shall, when brought on the site, be deemed to be exclusively intended for the construction and the Contractor shall not remove the same or any part thereof (save for purpose of moving it from on part of the site to another) without the consent in writing of the Engineer-in-charge who shall record the reasons for withholding the consent.

18.5 The materials shall not be stacked in place where it is liable to be damaged or lost due to traffic passing over or to be washed away by rain or floods, to be buried under the land slide etc. or ship down on embankment or hill side etc. No claims for any loss due to these and similar causes will be entertained.

18.6 Before stacking, the materials shall be free from all earth, rubbish, vegetable matter and other extraneous substance and in the case of metal, screened to gauge, if so directed when ready. Ir shall be collected/stacked entirely clear of the roadway, on ground, which has been cleaned of vegetation and leveled. On high banks, ghat roads
etc. where it may not be practicable to stack it entirely clear of the road way, it may be stacked with permission of the Engineer-in-charge, on berms in such a way as to cause minimum danger and obstruction to the traffic or as may be directed by him.

18.7 The material brought by the Contractor and dismantled material if any shall be so stacked as to allow the traffic on National Highway in smooth and undisturbed manner without any hindrances and as directed by Engineer-in-charge that the material stacked along the road side is causing hindrances to the through traffic or blocking the required working area then the such material will be ordered to be removed or shifted at the place directed by the Engineer-in-charge at the cost of the Contractor.

19 Supervision and Inspection of Work

19.1 Supervision

19.1.1 The Contractor shall either himself supervise the execution of the Works or shall appoint the competent agent approved by the Engineer-in-charge to act on his behalf. The intimation of appointment of such agent shall be communicated in writing to the Engineer-in-charge within 10 days of the date of issue of notice to proceed with the work.

19.1.2 Orders given to the Contractor’s agent shall be considered to have the same force as if these had been given to the Contractor himself. If the Contractor fails to appoint suitable agent as directed by the Engineer-in-charge the Engineer-in-charge shall have full power to suspend the execution of the work until such date a suitable agent is appointed and the Contractor shall be responsible for the delay so cause to the Works and Contractor shall not be entitled for any compensation on this behalf.

19.2 Inspection

19.2.1 The Engineer-in-charge and or any person authorized by him shall at all times have access to the Works or part thereof and to all Workshops and places (including required documents) where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall offer every facility for and every assistance in or in obtaining the right to such access.

19.2.2 The Contractor shall inform the Engineer-in-charge in writing when any portion of the work is ready for inspection giving him sufficient notice to enable him to inspect the same without affecting the further progress of the work.

19.2.3 The Contractor shall provide at his own cost necessary ladders and such arrangements as are considered safe by the Engineer-in-charge for proper inspection of all parts of the work.

19.2.4 The Contractor shall extend his full co-operation and make all necessary arrangement when needed for carrying out inspection of the work or any part of the work by the local representatives, M.L.A., M.P. and officers etc. No compensation shall be paid to the Contractor on this account.

20 Measurement of Works

20.1 Initial Measurement for Record.

20.1.1 Where for proper measurement of the work, it is necessary to have an initial set of levels or other measurement taken, the same as recorded in the authorized field book or Measurement book of Government by the Engineer-in-charge or his authorized representative will be signed by the Contractor who will be entitled to have a true copy of same made at his cost.

20.1.2 Any failure on the part of the Contractor to get such level etc. recorded before starting the work will render him liable to accept the decision of the Engineer-in-charge as to the basis of taking measurements.

20.1.3 The Contractor will not cover any work which will render its subsequent measurement
difficult or impossible without first getting the same jointly measured by himself and the authorized representative of the Engineer- in-charge. The record on the Government side of such measurement will be signed by the Contractor and he will be entitled to have a true copy of the same made at his cost.

20.2 Intermediate and Final Measurements

The General rules for intermediate & final measurement for payment shall conform to the provision mentioned in clause 113 of MORT&H specifications 5th Revision

21 Completion of Work

21.1 The Contractor after completion of work shall clean the site of all debris and remove all unused materials other than those supplied by the department and all plant and machinery, equipment, tools etc. belonging to him within one month from the date of completion of the work, or otherwise the same will be removed by the department at his cost o disposed of as per departmental procedure. In case the material is disposed off by department, the sale proceeds will be credited to the Contractors account after deducting he cost of sale incurred. However no claim of Contractor regarding the price of amount credited will be entertained afterwards.

21.2 The work shall not be considered to have been completed in accordance with the terms of the contract until the Engineer- in-charge shall have certified in writing to that effect. No approval of material or workmanship or approval of part of work during the progress of execution shall blind the Engineer- in-charge or in any way prevent him from even rejecting the work which is claimed to be completed and to suspend the issue of his certificate of completion until such alteration and modification or reconstruction have been effected at the cost of the Contractor as shall enable him to certify that the work has been completed to his satisfaction.

21.3 After the work is completed the Contractor shall give notice of such completion to the Engineer- in-charge and within 30 days of receipt of such a notice the Engineer- in-charge shall inspect the work and if there is no defect in the work, shall furnish the Contractor with certificate indicating the date of completion. However, if there are any defects which in the opinion of the Engineer- in-charge are rectifiable he shall inform the Contractor the defects noticed. The Contractor after rectification of such defects shall then inform the Engineer- in-charge and Engineer- in-charge on his part shall inspect the work and issue the necessary completion certificate within 30 days if the defects are rectified to his satisfaction and if not he shall inform the Contractor indicating defects yet to be rectified. The time cycle as above, shall continue.

21.4 In case defects noticed by the Engineer- in-charge which in his opinion are not rectifiable but otherwise work is acceptable at reduced payment, work shall be treated as completed. In such cases completion certificate shall be issued by the Engineer- in-charge within 30 days indicating the unrectifiable defects for which specified reduction in payment is being made by him.

21.5 The completion certificate shall not be issued until the site is thoroughly cleaned and cleared off all unwanted material

21.6 On completion of work in all respects necessary certificate will be issued by the Engineer- in-charge and defect liability period will be counted from the date of issue of such certificate.

21.7 Completion drawing

The Contractor shall submit to the Engineer- in-charge within 2 (two) months of actual completion “Completion Drawing” as specified below and operation and maintenance instruction for the whole of the work.
These drawings shall be accurate and correct in all respect and shall be shown to and approved by the Engineer-in-charge. For “Completion” drawing 2 (Two) prints and one polyester film of quality approved by the Engineer-in-charge or his representative shall be supplied.

21.8 **Supply of Color Record Photographs and Albums**

21.8.1 The Contractor shall arrange to take colour photograph at various stages / faces of the works including interesting and novel features of the work as desired by the Engineer-in-charge needed for authentic documentation as desired. The photographs shall be of acceptable quality and they shall be taken by professionally competent photographer with camera having the facility to record the date of photographs taken in the prints and negative /C.D. The Contractor shall supply two color prints of each of the photographs taken to the standard 4” x 6” size mounted in albums of acceptable quality along with C.D. Also the negative in 35mm. size for each photograph or in C.D. shall be supplied. Each photograph in the album shall be suitably captioned. It shall be considered as incidental to the work and no additional payment whatsoever will be made for the same.

21.8.2 **Videography**

Contractor shall supply video films/video C.D./Digital Photograph before stating of work, during execution and completed work of important activities of the work as directed by Engineer-in-charge during currency of the project and editing them to a video film / CD of playing time not less than 90 minutes and up to 180 minutes as directed by Engineer-in-charge. Such as film shall be suitably narrative and titled indicating chainage, activities. The video cassette / CD shall be of acceptable quality and shall be capable of producing colored pictures. This is incidental to work and no payments shall be made for the same.

22 **Handing over of Work**

22.1 All the work and material before finally taken over by Government will be the entire liability of the Contractor for guarding, maintaining and making good any damaged of any magnitude. Interim payments made for such work will not alter this position.

22.2 The handing over by the Contractor and taking over by the Engineer-in-charge or his authorized representative will always be writing of which copies will go to the Engineer-in-charge and the Contractor. It is however understood that before taking over such Works Government will not put it into regular use as distinct from casual or incidental one, except as specifically mentioned elsewhere in this contract, or as mutually agreed to.

22.3 **Indemnity**

The Contractor shall indemnify the Government against all action, suits, claims and demands brought or made against it in against of anything done or committed to be done by the Contractor in execution of or in connection with the work of this contract and against any loss or damages to the Government in consequences to any action or suit being brought against the Contractor for anything done or committed to be done in the execution of the work of this contract. The Government may, at its discretion and entirely at the cost of Contractor, defend such suit either jointly with the Contractor or single, in case the latter chooses not to defend the case.
23 Amenities to Department

24 Maintenance During Contract Period

24.1 The section of road in which the work lies shall be deemed to be handed over on Date of Work Order (in respect of repairs to potholes formed during agreement period). Notwithstanding whether the agency has tackled some length or otherwise the responsibility of maintaining the complete length covered under the scope of work will be with the agency only. The agency shall get the potholes filled as per the directions of the Engineer in-charge and ensure that the road remaining traffic worthy. The Contractor shall maintain the finished surface of the road for a period up to Defect Liability Period without any extra cost to the Government irrespective of the designs standards and specifications and actual traffic etc.

24.1.2 All damages during execution shall be made good by the Contractor at his own cost. He will be responsible for any damages to the road surface including B.T. surface in rainy seasons and during construction and guaranteed maintenance period and no separate payment will be made for restoring such damages.

24.1.3 Defective work is liable to rejected at any stage. The Contractor on no account shall refuse to rectify the defects merely on reasons that further work has been carried out. No extra payment shall be made for such rectification.

24.2 During Defect Liability Period

24.2.1 Defect Liability shall mean the obligation of Contractor to undertake the following Works as per the specifications, to the satisfaction of Engineer in-charge.

- a. To complete any work which is outstanding in date stated in Taking Over Certificate within a stipulated time as directed by Engineer in-charge and

- b. To execute all work required to remedy defects or damage as may be as notified by Engineer in-charge on or before the expiry date of the defects notified by the Engineer in-charge for the works or sections as the case may be. If a defect appears or damage occurs the Contractor shall be notified accordingly by the Engineer in-charge or his authorized representative on his behalf. The Contractor shall remedy the defects/ damages notified to him within a time period as stipulated by Engineer in-charge. If the Contractor fails to remedy/ rectify the defects or damages by this notified date, it shall be executed at the risk and cost of Contractor.

24.2.2 The Contractor has to commence the remediing work as soon as possible and in any case not later the 3 days of its communication by the Engineer in-charge and complete the same within 7 days maximum or in a time period as directed by Engineer in-charge. In case the Contractor fails to start the remediing work within above specified period, the department will take necessary action to carry out such Works at the risk and cost of the Contractor and the amount so incurred will be recovered from the Contractor from any such amount payable to the Contractor by the Government or though the deposit available with the department and even as recovery of land revenues if necessary.

24.3 The agency will have to make all necessary arrangements for smooth flow of traffic till the time the remediing rectification work is completed or also this will be done by the department at the risk and cost of Contractor. The Contractor’s liability of maintaining the road to the required specifications will commence right from the date of issue of notice to proceed with the work till the expiry of defect liability period. The extends to the untracked portion of work also.
24.4 **Visit of Contractor During Defect Liability Period**

Contractor shall carry out one inspection in every 3 months during the first year after completion of the work and carry minimum 2 inspections per year for the remaining 2 years of Defect Liability Period. However during rainy season the Contractor shall undertake such an inspection every month till the monsoon is over. The inspection shall be in the company of the representative of Engineer-in-charge. The defects noticed during the inspections shall be recorded and signed by the Contractor and representative of Engineer-in-charge. The Contractor shall rectify the defects if any, within 7 days or such period as may be notified by the Engineer-in-charge.

25. **Quality Control Tests:** - The contractor shall at his own cost set up Laboratory at site of work to carry out the testing of materials which are to be used for the work. This laboratory shall be approved by the Engineer-in-charge. The testing shall be done as per frequencies mentioned in the specification/additional specification of each item of Schedule 'B'. The 30% of the test included in Annexure 'A' (On Page No. 107) shall be carried out in Vigilance and Quality Control Laboratory at the cost of contractor and balance 70% in the site laboratory. The test which are not included in Annexure 'A' 50% test shall be carried out each in Vigilance and Quality Control laboratory and site laboratory. The frequency of testing of construction materials is mentioned in Annexure-Bon Page No. 108 to 109
SPECIFICATIONS FOR HOT MIX WORKS

25 Plants and Equipments

25.1 Contractor shall use of Drum Mix Plant-40-60 TPH capacity of standard make and specification:

General

The Batch Type Mix Plant should be of reputed make and proven design, sturdy in structure and capable of producing desired quality of mix as per specification for laying bituminous road surface and should have the following essential arrangements.

Cold Aggregate Feeder:

The cold aggregate feeder arrangement should have minimum 4 bins of sufficient capacity capable of storing different sizes of aggregate and fines to ensure continuous uninterrupted supply driven by a variable speed motor and a control gate to ensure accurate aggregate feed to meet design mix formula. It is a prerequisite that only properly screened and graded materials are fed to the bins.

There should be a gathering conveyor to receive and transport materials discharged from bins with separate drive arrangements.

There should be a screen or suitable arrangement like baffle plate at the discharge end of gathering conveyor for rejection of any oversize metal above permissible limit. The conveyor should be fitted with a suitable electronic load sensor device for weighing quantity of all aggregate being fed to dryer drum.

The plant should have a mineral filler arrangement with suitable control device to accurately proportion the flow of filler material into dryer drum at appropriate stage.

Dryer Drum:

It should be a thermo drum type with smooth rotation arrangement to give rated output and capable of reducing the moisture content of the aggregate to a desirable limit of 2% to 6% and achieving hot mix temperature (up to 160°C as per requirement) with such design that no blue smoke is emitted from the exhaust. The drum may have optional arrangement for feeding reclaimed material. There should be an arrangement to restrict burner flame up to a certain length in the drum before bitumen is injected.

It should be fitted with positive displacement bitumen pump driven by variable speed motor automatically controlled from control cabin capable of feeding measured quantity of bitumen synchronized with aggregate feed system. Thermo fluid system or hot oil circulation system should be an in-built feature to keep bitumen pump and pipes sufficiently hot to avoid clogging of pipes.

i) Burner: The burner used should be capable of burning the fuel efficiently and develop the required temperature. It should be fitted with remote control system to detect flame failure, and also electric spark ignition system or some other suitable arrangement. Burner operation should have thermostatic control of flame within the specified temperature range.

ii) Bitumen Heater: It should consist of an insulated tank of adequate capacity fitted with effective and positive control of temperature, for allowing continuous circulation of bitumen between bitumen heaters and proportioning units. Suitable arrangement should be provided for recording the temperature at the tank and in circulating system.

iii) Fuel System: Fuel tanks should be of sufficient capacity and fitted with a suitable type of fuel pump to receive the fuel from storage tank and supply to line heater and burner.

iv) Cyclone System: Cyclone unit is required to control dust discharge within the admissible standard of pollution board.

v) Operating Control Unit: The Batch Type Mix Plant must have centralized control system with operation from a control cabin located adjacent to the drum mix plant. The control system should be capable of following.
a. Automatic control of speed of each bin feeder conveyor and gate, so as to control and regulate the flow of various grades of material to ensure constant and accurate proportion of aggregates.

b. Pre-set and control percentage of flow of aggregate and bitumen required as per design mix.

c. Automatic detection of plant operation fault, display of aggregate temperature, asphalt mix temperature, aggregate flowing, fully automatic aggregate blending, bitumen/aggregate ratio control and burner control and system.

d. Control for pre-setting the moisture content of aggregate displayed distinctly.

e. Entire control system should be such that if desired it would be operated manually also.

vi) Surge Silo: The plant may have optional arrangement to store and hot mix material for at least equivalent 30% of rated capacity to cater for any delay in loading the tipplers. Temporary storage silo should have adequate automatic hydraulic unloading arrangement operated either from the control cabin or manually with necessary safety control.

25.2 Hot mix plant shall be calibrated by the recognized agency approved by the Engineer-in-charge or his representative and certificate to that effect shall be produced to Engineer-in-charge.

25.3 The Contractor will have to make his plant and machinery and equipment open for the inspection by the Engineer-in-charge or his representative and representative of MORT&H. The Contractor shall carryout necessary modification if any as directed by inspecting authorities.

25.4 The plant should have the facility of producing a computerized output of daily consumption of materials as regards the bitumen, materials and mix produced. The Contractor shall make available computer output to the Engineer-in-charge or to his representative as and when asked for.

The location of the Hot mix plant to be used for the work shall be such that distance the mix temperature at the time of laying bituminous mix shall in no case be less than as mentioned in table 500.2 of the MORTH Sp.Vth Rev. (April, 2013) published in IRC in Road and Bridge works.

25.5 The dry run and trial run of the hot mix plant should be carried out in presence of Engineer-in-charge or his representative as and when directed.

25.6 It is obligatory on the part of Contractor to obtain N.O.C. regarding Prevention and Control of Pollution Act, 1974.

25.7 The plant should have a fully equipped laboratory with trained personnel to carry out all testing-related to bituminous Works, as mentioned in MORT&H specification (fourth revision) clause No. 121.3.1

25.8 The contractor should employ qualified and experienced plan operator to run the hot mix plant and he should be capable of understanding and following the instruction of Engineer-in-charge or his representative.

26 Works

26.1 The hot mix work should be carried out from the approved plan and approved machinery only.

26.2 Source of metal to be used for work should be the same throughout. Should there be any change, the Contractor will have to obtain approval to the revised job mix formula at least 15 days prior to the date of its intended use.

26.3 Weather restriction to carryout hot mix work shall be as per MORT&H specification.
26.4 No hot mix Works shall be carried out during Night time unless otherwise permitted by Engineer-in-charge.

26.5 The newly land surface shall not be opened to traffic for at least 24 hours after laying and completion of compaction without the expressed approval of Engineer-in-charge in writing.

26.6 The necessary grade and camber for the road length under improvement should be strictly observed during execution.

26.7 The traffic management during execution of hot mix Works shall be as per MORT&H specification (fourth revision) clause No. 800.

26.8 Bituminous materials shall be transported in clean insulated vehicles and unless otherwise agreed by Engineer-in-charge shall be covered while in transit or waiting tipping.

26.9 Contractor should note that once the hot mix work is started he will not be allowed to operate his plant for any work other than the Works of Public Works Department without the specific permission in writing from Engineer-in-charge.

26.10 In case for any reasons, the Works get damaged the Contractor has to carry out the rectification at his risk and cost for full width of carriageway.

26.11 The Contractor shall be required to give a trial run of the equipment such as pavers, vibratory roller, sprayer etc. for establishing their capability to achieve the laid down specification and tolerances to the satisfaction to the Engineer-in-charge before commencement of work. All equipment and personnel shall be removed from Worksite without permission of Engineer-in-charge.

26.12 Plant mixed bituminous materials for pavement courses shall be weighted on accurate scales approved by the Engineer-in-charge in the presence of representative of Engineer-in-charge. As and when asked for. The weight slips shall be produced for official record. The activity is obligatory to work.

26.13 It is obligatory on the part of Contractor to carry out the field tests as required by the Engineer-in-charge. He should have required equipments and trained personnel to carry out such testing and will be the responsibility of Contractor to maintain record of such testing and to furnish such record to the Engineer-in-charge within 3 days from the date of testing.

26.14 The non-working machinery if any shall not be kept at the site of work. After a days work is over, the working machinery shall be parked in such a manner as not to cause any hindrance or pose danger to the traffic plying on the section of road. The working machinery parked on site should have traffic safety devices.

27 Roughness Index

The Contractor shall be responsible to measure the roughness of road surface for which he may use the Roughness Index, Testing machine at his own cost. Use of "Towed fifth wheel Bump integrator" shall be made to measure the roughness of the road surface. The calibration of the machine shall be done from time to time as and when warranted, from reputed institution like C.R.R.I., New Delhi and their certificate shall be produced to that effect. The values of roughness so measured shall not exceed the values given below for various types of road surfaces under standard conditions of carrying out the test and as specified below.

i) Bituminous Concrete: 2000 mm / Km.

The Roughness Index test shall be carried out before start of the work and after completion of surface course as directed by Engineer-in-charge.

The result of roughness index test shall be made available to the Engineer-in-charge within...
15 days from the test so taken and Engineer in charge shall submit the soft copy of result of roughness index test to the Executive Engineer National Highway Division Latur by email on nhlatur.ee@mahapwd.com. Work shall commence by the agency only after taking the roughness index test in presence of Engineer in charge.

As an outcome of roughness test, where the surface irregularity of wearing surface rails outside the tolerances mentioned above, the Contractor shall be liable to rectify the deficiencies in a manner as directed and to the satisfaction of the Engineer in charge.

If the Contractor fails to carry out roughness index test the same will be done departmentally and double the cost so incurred will be recovered from him.

28 General

28.1 Considering the stakes and technical intricacies involved in constructions. It is needless to emphasize that an unfailing control on quality of the work has to be exercised so as to ensure that the structures constructed are stable and sound. Quality of final products depends upon adopting the proper procedure of construction in addition to proper selection of materials. For ensuring the requisites of construction, the materials of work shall be subject to Quality Control tests for ascertaining the quality of material for its approval for construction.

28.2 All material to be used, all methods adopted and all works performed shall be strictly in accordance with the requirements of these specifications. The Contractor shall set up a field laboratory at locations approved by the Engineer in charge and equip the same with adequate equipments and personnel in order to carry out all required tests and Quality Control work as per specification and for as directed by the Engineer in charge. The interest layout of the laboratory shall be as directed by the Engineer in charge. The list of equipment and the facilities to be provided shall be got approved from the Engineer in charge in advance and shall be as per MORT&H specification (Fifth Revision) clause No.121.3

28.3 The Contractor shall carry out quality control tests on the materials and work to the frequency stipulated in relevant clause of MORT&H specification. In the absence of clear indication about method and or frequency of tests for any item, the instructions of the Engineer in charge shall be followed.

28.4 For satisfying himself about the quality of the materials and work, quality control tests will also be conducted by the Engineer in charge (by himself by his quality control units or by any other agency as deemed fit by the Engineer in charge) generally to the frequency set. Additional tests may also conduct where, in the opinion of the Engineer in charge, needs for such tests exist.

28.5 The Contractor shall provide necessary cooperation and assistance in obtaining the samples for tests and carrying out the field tests as required by the Engineer in charge from time to time. This shall include provision of labour, attendants, assistance in packing and dispatching and any other assistance considered necessary in connection with the tests by Engineer in charge.

28.6 The Contractor shall carry out modifications in the procedure of work, if found necessary, as directed by the Engineer in charge during inspection. Works failing short of quality shall either be rectified or redone by the Contractor at his own cost, shall also remove defective work or material from the site of Works.

28.7 The cost of laboratory building, including services, essential supplies like water, electricity, sanitary services and their maintenance and cost of all equipment, tools, materials, labour and incidents to perform tests and other operation soft quality control according to the specifications requirements be deemed to be incidental to the work and no extra payment shall be made for the same.
28.8 For testing of samples of soils / soils mixes, granular materials and mixes bituminous materials and mixes, cement and concrete cubes, aggregate mixes etc., samples in the required quantity and form shall be supplied to the Government laboratory or any other laboratory as directed by the Engineer in charge by the Contractor at his own cost.

28.9 For cement bitumen, mild steel, and similar other materials where essential test are to be carried out at the manufacturers plants or at laboratories other that the site laboratory the cost of samples, sampling testing and furnishing of tests certificates shall be borne by the Contractor. He shall also furnish the test certificate to the Engineer in charge in reasonable time as directed by the Engineer in charge.

28.10 All materials which the Engineer in charge/representative has determined as not conforming to the requirements of the contract shall be rejected whether in place or not, they shall be removed immediately from the site as directed. Materials which have been subsequently corrected, shall not be used in the work unless approval is accorded in writing by the Engineer in charge. Upon failure of the Contractor to comply with any order of the Engineer/ his representative, given under this clause, the Engineer in charge/ his representative shall have authority to cause the removal of rejected material and to deduct the removal cost thereof from any payments due to the Contractor.

28.11 For ensuring the requisite quality of construction, the materials and Works shall be subjected to quality control tests, as described in MOSRT&H specifications (Fourth Revision) section No.900 and 1000 as mentioned in the relevant clauses for all items. The testing frequencies set forth in relevant clauses for all items are the desirable minimum and the Engineer in charge shall have the full authority to vary out additional tests as frequently as he may deem necessary, to satisfy himself that the materials and Works comply with the appropriate specifications.

28.12 Test procedures for the various quality control tests are indicated in the respective I.S code. Where no specific testing procedure is mentioned, the tests shall be carried out as per the prevalent accepted engineering practice to the directions of the Engineer in charge.

29 Samples & Method of sampling

29.1 All materials to be used on work such as cement, aggregate steel, bitumen, wood, tiles etc. shall be got approved in advance from the Engineer in charge and shall pass the tests and analysis required by him.

29.2 The tests shall be

(a) as per specifications of the items concerned and or,

(b) as specified by the Indian Road Congress standard specification and code of practice for road and bridges or,

(c) I.S. specification whichever and wherever applicable

(d) As per specification of Ministry of Road Transport and Highways latest edition 900, 1000, 1700 & 1900 Quality control for road work.

(e) Such recognized specification acceptable to the Engineer in charge as equivalent thereto or in the absence of such authorized specification.

(f) Such requirement/tests and or analysis in the order of precedence given above.

29.3 The Contractor shall at his cost make all arrangements and/or shall provide for all such facilities as the Engineer in charge may require for collecting, preparing and forward required number of samples for testing or for analysis of the materials or product for which laboratory testing is required to the nearest approved Government laboratory as directed by Engineer in charge. The Contractor shall bear all charges and cost of tests or analysis of such samples, shall also be deposited with the laboratories as per their prevailing schedule or rates.

29.4 The Contractor shall, if and when required, submit at his cost the samples of materials to be tested or analyzed and if so directed, shall not make use or incorporate in the Works any
The method of sampling and testing of materials shall be as required by the Handbook of Quality control for construction of Roads and Runways" (IRC: SP:11), relevant I.S. codes and the relevant MOSRT&H Specifications. Where they are contradicting, the provision in these specifications shall be followed. Where they are silent, sound engineering practices shall be adopted. The sampling and testing procedure to be used shall be as approved by the Engineer-in-charge and his decision shall be final and binding on the Contractor.

30. Testing of Materials

30.1 The Contractor shall make field arrangements for testing of all materials as per MORT & H specifications or as directed by Engineer-in-charge in the field laboratory.

30.2 The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of material.

30.3 The quality control tests shall be carried out at various stages of work, viz. selection of material to be procured for work, acceptance of procured material before its use on the work, acceptance of procured material before its use on the work, after completion of work in view of its strength, durability, serviceability, etc, and as directed by Engineer-in-charge for any other reasons of public interest.

30.4 The Contractor shall carry out at least 30% testing from the Regional/District Laboratory of the department. The necessary testing charges for these 30% tests shall be borne by the Contractor shall carry out remaining 70% tests at his own cost in the laboratory established by him for the work. This is subject to the condition that the field laboratory established by the Contractor at site or plant is certified to have set up as mentioned in the clauses hereunder by the Engineer-in-charge. The testing charges shall be as per the prevailing schedule of rates of Vigilance & Quality control Circle.

31 Laboratory Setup

Field Laboratory

The Contractor for the purpose of testing of material shall arrange to provide and maintain fully furnished and adequately equipped field laboratory of adequate floor area, as shown in drawing. The field laboratory shall preferably be located adjacent to the site of work. In case of road Works the field laboratory shall either be established at plant site or as directed by the Engineer-in-charge. The field laboratory shall be provided with amenities like water, electric supply etc., to be arranged by Contractor.

(a) The floor space requirement shall include office space for engineer & Contractor’s representative storage of samples, installation of equipment, laboratory table, cup boards, working platform of size 1 m x 10 m—working space for carrying out various tests, Curing tank, wash basin, toilet etc. and the minimum furniture such as office tables & chairs for material engineers, stools, working tables, store accessories.

(b) The cost of construction of laboratory & site office at work site or plant site as the case may be, and cost of supply of furniture, electrical equipments fittings during the currency of contractor is incidental to work and no separate payment will be made for the same to the Contractor.

(c) The laboratory established by the Contractor shall be manned by a qualified material Engineer/Civil Engineer assisted by experienced technicians, and the set-up shall be got approved from the Engineer-in-charge.

(d) The Contractor should prepare printed proforma for recording readings results of each type of tests. Such formats shall be got approved from the Engineer-in-charge. The Contractor should keep a daily record of all the tests carried out by him. Two copies of the test results will be returned to the Contractor by Engineer-in-charge for keeping the record of test results in acceptable manner at site of work.
All Quality Control registers / records shall be maintained by the Contractor and checked by the Engineer-in-charge or his representatives regularly. The list of register required to be maintained shall be got approved from Engineer-in-charge in advance.

32 Set-up of equipments

32.1 The Contractor shall set up the laboratory equipments for tests to be carried out as per specifications of item or as directed by Engineer-in-charge. Tentative list of equipment shall be as per MORT & H specification (fourth revision) clause no. 121.3

32.2 The Contractor shall use calibrated equipment to the latest date in the laboratory so established. The Contractor will have to carry out the calibration of the equipments from the approved agency as and when directed by the Engineer-in-charge at his own cost in cases where the calibration validity stands expired.

33 Frequency of Test

33.1 Overall quality of the work depends on the quality of ingredient material being used in the work and exercising adequate control over it. It is therefore prime responsibility of the Contractor to get the ingredient material and product tested strictly as per the frequencies stipulated hereunder.

33.2 The testing frequency specified hereunder are minimum and Engineer-in-charge shall have full rights to carry out additional tests as may be necessary to satisfy himself that the material and Works comply with requirement of the specifications.

33.3 The frequency of the testing shall be conforming to the MORT & H specification under Chapter 900, 1000, 1700, & 1900.

33.4 The right of acceptance / rejection of the material / work done is reserved by Engineer-in-charge in view of non conformance of frequency of testing.

33.5 The cost involved on account of testing of materials as per the frequency MORT & H specification clause is to be included in the respective tender items. The cost of testing charges as per prevailing schedule of rates VQCC laboratory shall be borne by the Contractor.

33.6 If the Contractor fails to carry out testing as per the specified frequency, the cost of the testing charges at penal rate equal to ten times the prevailing schedule of rate of VQCC laboratory will be recovered from him to the extent of shortfall. The recovery on account of shortfall in testing with reference to specified frequency will be done from his immediate bills due for payment and will be credited to Government account.

33.7 Various tests (and their frequencies) to be conducted to assure quality control on the work shall be as relevant clauses of MORT & H specification (fourth revision) and as directed by Engineer-in-charge.

34 Training of Personnel

The contractor shall arrange training camp, Workshops, seminars etc. for his personnel deployed/being deployed on site and plant and the departmental staff as identified by the Engineer-in-charge, well in advance of likely start of the work, for monitoring quality of work to the optimum level. The Contractor in consultation with Engineer-in-charge shall decide for training program schedule and the faculty for the training course as soon as the work order is issued to him.

35 QUALITY ASSURANCE

Quality Assurance

35.1 It is a process which exercises various checks at different stages for a work right from its inception till its acceptance, to put it in service to ensure that the work has been properly designed and constructed as per approved designs, drawings and specifications.

35.2 In order that the properties of the completed structure be consistent with the requirements and the assumptions made during planning and the design, adequate Quality Assurance measures should be taken at the site of work.
35.3 The construction should result in satisfactory strength, serviceability and long term durability so as to lower the overall life cycle cost.

35.4 Quality Assurance Manual: It provides a base document outlining policies, procedure, responsibility, compliance acceptance criteria and documentation. It shall generally cover the following aspects:
   a). Identification of all persons of Contractor and as well as department side involved in Quality Assurance and their interrelationship.
   b). Internal Quality Assurance system of the Contractor and the Engineer in charge.
   c). Levels of cross checking, verification including system of inspection and audit.
   d). Organization of personnel, responsibilities and lines of reporting.
   e). Criteria for acceptance / rejection including identification of authorities for making such decisions.
   f). Inspection at the end of Defect Liability Period.
   g). Item to be included in maintenance manual
   h). All formats for documentations.

35.5 Quality Assurance Manual shall be prepared and accepted by the Contractor and the Engineer in charge before start of the work.

35.6 Quality Assurance manual consisting of quality plans, test plans, checklist for inspection, quality Audit and third party inspection shall be prepared and furnished by the Contractor in pursuant to clause no. 59 of condition of contract and shall confirm to the provision stipulate in “Guideline on Quality system for Roads”—IRC:SP:57–2000.

36. Additional works for Right of Way Integrity

“In addition to the foregoing the engineer may deem it necessary to instruct the performance of other works from time to time during the progress of the Contract to preserve the integrity of the Right of Way”.

37. Deductible amount for Non-provision of amenities

   i) Field Laboratory at Plant site Rs. 0.25 lakhs
   ii) Office at Plant site Rs. 0.25 lakhs
   iii) Furniture Rs. 0.25 lakhs

2 Whether the Government land for establishing field laboratory and site office will be made available? No.

3 In case field laboratory and site office along with equipment, furniture, and amenities is established at Govt. land by the Contractor whether it will be the property of Government. No.

4 Whether the roughness index test is intended to be carried out by the Contractor? Yes. (before and after of each layer of bitumen)

5 The laying temperature of the Mix required at the site should be the criteria for distance of the plant. To ensure this temperature, automatic temperature measurement shall be provided.
38. SPECIAL CONDITIONS

(1) MORTH Specification for Road and Bridges Work (Fifth revision 2013):

MORTH Specification for Road and Bridge Work (Fifth revision—April 2013) shall form part of the contract documents and the contractors shall be legally bound to the various provisions made therein unless and otherwise specifically relaxed or waived wholly or partly by any special clauses in the contract documents.

(2) Special Condition for B.T. work:

2.1 In respect of Black Top Work, 15% (Fifteen percent) payment of Black Top in a particular km will be retained till completion of side berms / C.D. Works etc. in that km. After completion of other items satisfactorily, the withheld payment will be released finally.

2.2 Laying temperature of the mix required at the site should be the criteria for distance of the plant. To ensure this temperature, automatic temperature measurement with video camera or any other suitable technology shall be provided.

2.3 The aggregate required for the item of Hot Mix shall be screened in “mechanical Vibratory Screening Unit” so as to comply with the grading requirement as specified in MORT&H specification and then only shall be fed to the Hot Mix Plant for heating and mixing. The Mechanical Vibratory screening unit shall consist of main input hopper to receive raw metal, conveyor belt to transport it to the “Mechanical Vibratory Screening Unit.” The Mechanical Vibratory screening unit shall have required number of trays, sieves/decks as directed by Engineer In charge. The output of Mechanical Vibratory Screening unit shall be conveyed to the “storage unit /feeder”. The metal so supplied from the “Mechanical Vibratory Screening unit” at site shall not exempt the contractor from carrying out tests as specified in the specifications.

However if the mechanical Vibratory Screening unit is installed at quarry site, the contractor shall provide Vehicle Tracking System for all vehicles used for the particular work of National Highway. The contractor shall also provide web application that will show all vehicles of the contractor on a GIS map along with the hot mix plant. The contractor shall also provide software that will update the entire mapping on the PWD NH e-governance works management system. The system of complete management of VTS for monitoring by the PWD staff shall have to be provided by Contractor at his own cost.

The above condition of installation of Mechanical vibratory screening unit shall be exempted only, if the contractor uses the Drum Mix type Hot mix Plant (Minimum 40-60TPH capacity).

2.4 Procurement of aggregate For Grade— I / Grade—II / Grade—III / WBM and for— BUSG work

The metal shall be supplied at site only after screening it on “mechanical vibratory screening unit”. The special “mechanical vibratory screening unit” arrangement shall consist of main input hopper to receive raw metal, conveyor belt to transport it to the “mechanical vibratory screening unit”. The “mechanical vibratory screening unit” shall have required number of trays, sieves/decks as directed by the Engineering in charge. The output of “mechanical vibratory screening unit” shall be conveyed to “storage Unit” where metal of different sizes, shall be stored separately. Metal so supplied shall undergo all the tests as per the specifications. As a input to the main input hopper, contractor may use hand broken metal or output of primary crusher of size not less than 24“x18”. The metal so supplied from the “mechanical Vibratory screening unit” at site shall not exempt the contractor from carrying out tests as specified in the specifications.

2.5 Supervision on Work by Field Officers.

2.5.1 The Executive Engineer shall remain present and personally supervise the first 200 m length accordingly in presence of Deputy Engineer, Junior Engineer and Contractor/Contractor’s representative.
2.5.2 The Deputy Engineer shall remain present and personally supervise at least 25% of the area of primer coat/tack coat/seal coat executed.

2.5.3 The Junior Engineer shall remain present and personally supervise cent percent length executed.

2.5.4 The Executive Engineer shall show the check measurement of primer coat/tack coat accordingly in the measurement book for the executed 200 m demo length. This check measurement shall be part of percentage check measurement required by Executive Engineer as per the Maharashtra Public Works Manual, Appendix-24.

2.5.5 The work order book shall be kept to maintain evidence of supervision on work by field officers as mention at Sr.no 2.5.1 to 2.5.4. The measurement of primer coat/tack coat/liquid seal coat of the work shall be recorded by Deputy Engineer only.

2.5.6 The Engineer in charge shall allow the commencement of work after inspection of Hot mix plant, sensor paver and other key equipment, testing of material and approval of quarries, job mix design of bituminous macadam and BC/SDBC, establishing temporary bench mark on permanent pillar and leveling.

3. DELETED

4. Special conditions for Road safety item such as Thermoplastic retro reflective painting, cat eyes, sign boards, W-Beam crash barrier.

i) The work of road marking with Hot applied thermoplastic compound shall be carried out as per specification in Schedule C with approved road marking machine and paint of approved manufactures.

ii) The payment of these item shall be made only after furnishing the approved manufacturer’s Test certificates.

iii) The work of thermoplastic retro reflective painting, cat eyes, sign boards, W beam crash barrier shall have to be got executed by approved/specialized agency empanelled/ approved by MORT&H.

The contractor shall not sublet the item of road marking without the approval of the Employer i.e. Chief Engineer, National Highway in writing. Sub contracting does not alter the contractors obligations.

iv) Subletting proposals shall be comprise sublet agreements on Rs.100/- stamp paper mentioning experience of the sub contractor experience certificates & details of Machinery and material to be used.

5. This is annual programme for pot hole filling. The contractor have to carry out the work as and when required as per requirement of site. The pot holes shall be within 48 hours to keep road surface pot hole free.
Specifications for Non-Woven Geo-textile (GC-140) fabric material

ASPHALT OVELAY INSTALLATION

ASPHALT DISTRIBUTOR.

The distributor shall be capable of spraying the asphalt sealant at the prescribed uniform application rate. No streaking, skipping, or dripping will be permitted. The distributor shall also be equipped with a hand spray having a single nozzle and positive shut-off valve.

GEOTEXTILE HANDLING EQUIPMENT.

Mechanical or manual laydown equipment may be used provided the laydown is smooth and without wrinkles or creases.

MISCELLANEOUS EQUIPMENT.

Stiff bristle brooms or squeegees shall be provided to smooth the geotextile, scissors or blades for cutting same, and brushes for applying asphalt sealant at the geotextile overlaps.

When the ambient temperature is so low that the normal wicking of the asphalt sealant into the geotextile does not occur, a Pneumatic roller may be used to ensure geotextile bond to the adjoining pavement layers, especially where thin lifts or chip seals are being placed.

CONSTRUCTION REQUIREMENTS.

(a) WEATHER LIMITATIONS.

Neither the asphalt sealant nor geotextile shall be placed when weather conditions, in the opinion of the Engineer, are not suitable. Air and pavement temperatures shall be sufficient to allow the asphalt sealant to hold the geotextile in place. For asphalt cements, the minimum air temperature shall be 50 °F {10 °C} and rising. When using asphalt emulsions, the minimum air temperature shall be 60 °F {15 °C} and rising.

(b) SURFACE PREPARATION.

The surface on which the geotextile is to be placed shall be free of dirt, water, vegetation, or other debris. Cracks exceeding 1/8 inch {3 mm} in width shall be filled with a rubberized joint sealer meeting the requirements of ASTM D 3405 and potholes shall be properly repaired as directed by the Engineer. The joint sealer shall be allowed to cure prior to geotextile placement.

(c) APPLICATION OF ASPHALT SEALANT.

The asphalt sealant shall be spray applied uniformly to the prepared dry pavement surface at the rate of 0.20 to 0.30 gallons per square yard {0.9 to 1.36 L/m²} or as recommended by the geotextile manufacturers and approved by the Engineer. The recommended application for asphalt cements is 0.20 gallons per square yard {0.9 L/m²} with rough and ravelled surfaces requiring a higher application. When using emulsions, the application rate shall be increased to offset the water content of the emulsion.

Application of the sealant shall be by distributor spray bar, with hand spraying kept to a minimum.

Temperature of the sealant shall be sufficiently high to permit a uniform spray pattern. For asphalt cements, the minimum temperature shall be 290 °F {143 °C}. To avoid damage to the geotextile, however, distributor tank temperatures shall not exceed 325 °F {163 °C}. Spray patterns for asphalt emulsion can be improved by heating. Temperatures in the 130 to 150 °F {54 to 71 °C} range are recommended. A temperature of 160 °F {71 °C} shall not be exceeded since higher temperatures may break the emulsion.
The target width of asphalt sealant application shall be 6 inch (150 mm) wider than the geotextile width. The sealant shall not be applied any farther in advance of geotextile placement than the distance which the Contractor can maintain free of traffic.

Asphalt spills shall be cleaned from the road surface to avoid flushing and geotextile movement. When asphalt emulsions are used, the emulsion shall be cured (essentially no water remaining) prior to placing the geotextile and final wearing surface.

(d) GEOTEXTILE PLACEMENT.

The geotextile shall be placed into the asphalt sealant with minimum wrinkling prior to the time the asphalt has cooled and lost tackiness. As directed by the Engineer, wrinkles or folds in excess of 1 inch (25 mm) shall be split and laid flat. Brooming and/or pneumatic rolling will be required to maximize geotextile contact with the pavement surface.

Overlap of geotextile joints shall be sufficient to ensure full closure of the joint, but should not exceed 6 inches (150 mm). Transverse joints shall be lapped in the direction of paving to prevent edge pickup by the paver. A second application of asphalt sealant to geotextile overlaps will be required, if in the judgement of the Engineer, additional asphalt sealant is needed to ensure proper bonding of the double geotextile layer. Removal and replacement of damaged geotextile will be the responsibility of the Contractor. Trafficking the geotextile will be permitted for emergency or construction equipment only.

(e) ASPHALT OVERLAY.

Placement of the hot mix overlay shall closely follow geotextile laydown. The temperature of the mix shall not exceed 325 °C (163 °C). In the event asphalt bleeds through the geotextile causing construction problems before the overlay is placed, the affected areas shall be blotted by spreading sand or hot mix. To avoid movement or damage to the geotextile membrane, turning of the paver and other vehicles shall be gradual and kept to a minimum.

(f) SEAL COATS.

Prior to placing a seal coat (or thin overlay such as an open-graded friction course), the geotextile shall be lightly sanded at a spread rate of 1.5 to 2.0 pounds per square yard (0.8 to 1.1 kg/m²) and pneumatically rolled so as to embed the geotextile tightly into the sealant.
SECTION – 6
FORM OF BID
FORM OF BID #

Description of the Work: Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.

Chief Executive Officer,
Maharashtra Maritime Board,
Indian Mercantile Chamber, 3rd floor,
Ramjibhai Kamani Marg, Ballard Estate,
Mumbai-400 001.

1. We offer to execute the works described above and remedy any defects therein in conformity with the conditions of contract, specification, drawings, Bill of Quantities and Addenda for the sum(s) of .................................................................

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer’s notice to commence and to complete the whole of the Works comprised in the Contract within the time stated in the document.

3. We agree to abide by this Bid for the period of 75 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

4. Unless and until a format Agreement is prepare and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive.

6. We accept the appointment of Shri. ........................................................ as the Dispute Review Expert.

(OR)

We do not accept the appointment of Shri. ......................... as the Dispute Review Expert and propose instead that Shri. ................. be appointed as Dispute Review Expert, whose BIO-DATA is attached.

Dated this .................... day of .................... 20.................

Signature _______________________ in the capacity of _________duly authorised sign bids for and on behalf of ........................................................................................................ (in block capitals or typed)

Address

Witness

Address

Occupation

# Note-The bidder will submit this form online without his financial offer. The bidder shall fill the rates online in the BOQ sheet provided in the e-tender portal only.
SECTION – 7

BILL OF QUANTITIES

Refer Part-II
SECTION – 8
SECURITIES AND OTHER FORMS
BID SECURITY (BANK GUARANTEE)

WHEREAS, _____________________________ [Name of bidder] (hereinafter called “the Bidder”) has submitted his Bid dated ______________ (date) for the construction of __________________ [name of Contract hereinafter called “the Bid”]

KNOW ALL PEOPLE by these presents that We ___________________________ [name of Bank] of __________________________ [name of Country] having our registered office at __________________________ [name of Bank] (hereinafter called “the Bank”) are bound unto ___________________________ [name of Employer] (hereinafter called “the Employer”) in the sum of __________________________ for which payment well and truly to be made to the said Employer the Bank itself, his successors and assigns by these presents.

SEALED with the Common Seal of the Said Bank this __________ day of ________, 20 __

THE CONDITIONS of this obligation are:

1. If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of bid.

OR

2. If the Bidder having been notified to the acceptance of his bid by the Employer during the period of bid validity:

   (a) Fails or refuses to execute the Form of Agreement in accordance with Instructions to Bidders, if required; or

   (b) Fails or refuses to furnish the performance Security, in accordance with the Instructions to Bidders; or

   (c) does not accept the correction of the Bid Price pursuant to Clause 27

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date ______________ ** days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extensions(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.
The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

45 days after the end of the validity period of the bid Date should be inserted by the Employer before the Bidding documents are issued.
ADDITIONAL PERFORMANCE SECURITY BANK GUARANTEE

To,

Executive Engineer,

Integrated Unit (P.W.) Division,

2nd Floor, Bandhakam Bhavan,

Murzban Road, Fort, Mumbai—400 001.

WHEREAS ________________________________ [name and address of Contractor] (hereafter called “The Contractor”) has undertaken, in pursuance of Contract No. ___________ dated __________ to execute ______________________ [name of Contract and brief description of Works] (hereinafter called “the Contractor”)

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of ____________________________ [amount of guarantee]* ____________________________ (in words), such sums being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ____________________________ [amount of guarantee] as aforesaid, without needing to prove or show ground or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between your and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid 28 days from the date of expiry of the Defect Liability Period.

Signature and Seal of the Guarantor __________________________

Name of Bank __________________________

Address __________________________

Date __________

* An Amount shall be inserted by the Guarantor, representing the percentage the contract price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.
BANK GUARANTEE FOR ADVANCE PAYMENT

To,

____________________________ [name of Employer]

____________________________ [address of Employer]

____________________________ [name of Employer]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Sub-clause 51.1 ("Advance payment") of the above mentioned Contract, __________________ [name and address of Contractor] (hereafter called "The Contractor") shall deposit with ____________________________ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of ___________ [amount of Guarantee]* ___________________________ (in words)

We, the ______________________________ [bank of financial institution], as interested by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligor and not as Surety merely, the payment to _______________ [name of Employer] on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding ___________ [amount of Guarantee]* ___________________________ [in words]

We further agree that no change or addition to or other modification of the terms of the Contractor or Works to be performed there under or of any of the Contract documents which may be made between ____________________________ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until ____________________ [name of Employer] receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and Seal ______________________________

Name of Bank/Financial Institution __________________

Address ______________________________

Date __________________

* An Amount shall be inserted by the Bank or Financial Institution, representing the amount of the advance payment and denominated in Indian Rupees.
INDENTURE FOR SECURED ADVANCES

(For use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time.)

This indenture made the ______ day of ________ , 20 ______ BETWEEN
_______________ (hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the employer of the Other Part.

Whereas, by an agreement dated ________________ (hereinafter called the said agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the Employer that he may be allowed advanced on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he is undertaking to execute at rates fixed for the finished works (inclusive of the cost of materials and labour and other charges).

AND WHEREAS the Employer has agreed to advance to the Contractor the sum of Rupees ______________________ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the Contractor on __________ and the Employer has reserved to himself the option of making any further advance or advance on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees ________________ paid to the Contractor by the Employer (the receipt whereof the contractor doth hereby acknowledge) and of such further advance (if any) as may be made to him as aforesaid the contractor doth hereby covenant and agree with the President and declare as follows:

(1) That the said sum of Rupees __________________________ so advanced by the Employer to the Contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the Contractor in or towards the execution of the said works and for no other purpose whatsoever.
(2) That the materials detailed in the said account of Secured Advances which have been offered to and accepted by the Employer as security are absolutely the Contractor's own property and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance of the security of materials which are not absolutely his own property and free from encumbrances of any kind and the contractor indemnified the Employer against all claims in respect of which an advance has been made to him as aforesaid.

(3) That the materials detailed in the said account of Secured Advance and all other materials on the security of which any further advance or advance may hereafter be made as aforesaid (hereafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the Engineer.

(4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the Engineer or any officer authorised by him. In the event of the said materials or any part thereof being stolen, destroyed, or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the Engineer.

(5) That the said materials shall not at any account be removed from the site of the said works except with the written permission of the Engineer or an officer authorized by him on that behalf.

(6) That the advance shall be the Employer of the price payable in full when or before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payment are made to the Contractor on account of work done than on the occasion of each such payment the Employer will be at liberty to make a recovery from the contractor's bill for such payment by deducting there from the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

(7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the said amount of the advance or advances that may still be owing to the Employer shall immediately on the happening of such default be repayable by the Contractor to be the Employer together with interest thereon at twelve percent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Employer in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Employer to reply and pay the same respectively to him accordingly.

(8) That the contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _________________________ and any further sum or sums advanced as aforesaid and all
costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the power contained therein if and whenever the covenant for payment and repayment herebefore contained shall become enforceable and the money owing shall not be paid in accordance therewith the Employer may at any time thereafter adopt all or any of the following courses as he may deem best:

(a) Seize and utilise the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor, he is to pay same to the Employer as agreed.

(b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Employer under these presents and pay over the surplus (if any) to the Contractor.

(c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said advance shall not be payable.

(9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.

(10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the solution of which has not been otherwise expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.
Letter of Acceptance

(Letterhead paper of the Employer)

To,

________________________ [name and address of the Contractor]

________________________

________________________

Dear Sirs,

This is to notify you that your online bid dated ____________ for execution of the ________________________________ (name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees ___________________________ (_____________) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our agency.

We accept / do not accept that _____________________ be appointed as the Adjudicator.

You are hereby requested to furnish Performance Security, in the form detailed in Para 34.1 of ITB for an amount equivalent to Rs. _____________ within 07 days of the receipt of the letter of acceptance valid up to 28 days from the date of expiry of defects Liability Period i.e. up to _____________ and sign the contract, failing which action as stated in Para 34.2 of ITB will be taken.

Yours faithfully,

Authorised Signature

Name and title of Signatory

------------------------- Name of Agency

1. Delete “Corrected and” or “and modified” if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

2. To be used only if the contractor disagrees in his Bid with the Adjudicator proposed by the Employer in the “Instructions to Bidders.”
Issue of Notice to proceed with the work
(Letter head paper of the Employer)

__________________________ (Date)

To,
__________________________ [name and address of the Contractor]
__________________________
__________________________

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 34.1 and signing of the Contract for the work of **Strengthning and bitumenig of road at custom office to light house at varavade tal and dist. Ratnagiri**.

Bid Price of Rs.____________

You are hereby instructed to proceed with the execution of the said works in accordance with the documents.

Yours faithfully,

Executive Engineer,
Maharashtra Maritime Board,
mumbai.
AGREEMENT FORM

Agreement

This agreement, made the __________ day of ____________ between __________ (name and address of the Employer) [hereinafter called “the Employer”] and _______________________ (name and address of contractor) hereinafter called “the Contractor” of the other part.

Whereas the employer is desirous that the Contractor execute _________________________ (name and identification number of Contractor) (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs ____________

NOW THIS AGREEMENT WITNESSTH as follows:

(1) In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read and construed as part of this Agreement.

(2) In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to all aspects with the provisions of the contract.

(3) The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

(4) The following documents shall be deemed to form and be ready construed as part of this agreement viz.

i) Letter of Acceptance
ii) Notice to proceed with the works
iii) Contractor’s Bid
iv) Condition of contract : General and Special
v) Contract Date
vi) Additional condition
vii) Drawings
viii) Bill of Quantities and
ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written.

The Common Seal of __________ was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said ____________________________

in the presence of:

Binding Signature of Employer __________________________________________

Binding Signature of Contractor _________________________________________
UNDERTAKING

[Bid Validity Form]

I, the undersigned do hereby undertake that our firm M/s. ______________________________ agree to abide by this bid for a period _______ days for the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

________________________
(Signed by an Authorized Officer of the Firm)

_____________________
Title of Officer

_____________________
Name of Firm

_____________________
DATE
SECTION – 9

DRAWINGS

Refer Part II
DOCUMENTS TO BE FURNISHED BY THE BIDDER
(Attached)
STANDARD BIDDING DOCUMENT
PROCUREMENT OF CIVIL WORKS

PART-II
COMPLETE BIDDING DOCUMENT

NAME OF WORK: Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.
GOVERNMENT OF MAHARASHTRA

AGREEMENT NO-----------

NATIONAL COMPETITIVE BIDDING
(CIVIL WORKS)

<table>
<thead>
<tr>
<th>Name of work</th>
<th>Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender Issue Date</td>
<td>Date.28.05.2018 at 10.00 hrs</td>
</tr>
<tr>
<td>Time and date of pre-bid conference</td>
<td>Date.06.06.2018 at 15.00 hrs, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
<tr>
<td>Opening Date (If possible)</td>
<td>Date.25.06.2018 at 12.05 hrs Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
<tr>
<td>Officer inviting bids</td>
<td>Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
</tbody>
</table>
SECTION 1 – INSTRUCTIONS TO BIDDERS (ITB)

Refer SECTION 1

Of

PART I

COMPLETE BIDDING DOCUMENT
### APPENDIX TO ITB

<table>
<thead>
<tr>
<th>Sr. no.</th>
<th>Item</th>
<th>Quantity / Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I)</td>
<td>Providing and laying in situ / ready mix M-25 plain cement concrete of trap metal for cast in situ piers, abutment, returns, wings etc. including provision of &quot;V&quot; shaped false joints to form suitable panels on the faces to approve design with compacting by vibrating and curing complete, including plywood/steel form work centering (excluding dewatering by means of pump) and including bailling out water and curing finishing in CM 1:3 etc. complete.</td>
<td>470.37</td>
</tr>
<tr>
<td>II</td>
<td>Supplying and Laying trap stone rubble weighing 50 to 100 Kilogramme for Subarmour layer including quarrying conveying with all the leads and lifts and placing at required places in required line, level, slope and section as directed etc. complete under tidal conditions.</td>
<td>271.44</td>
</tr>
<tr>
<td>III)</td>
<td>Supplying and Laying trap stone rubble weighing 300 to 500 Kilogramme for apron / armour layer including quarrying, conveying with all the leads, lifts, laying in required line, level, slope including necessary equipment and machinery as directed etc. complete in the tidal conditions.</td>
<td>301.45</td>
</tr>
</tbody>
</table>

### Clause Reference

<table>
<thead>
<tr>
<th>Section – I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name of the Employer is Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001</td>
</tr>
<tr>
<td>2. The last five years</td>
</tr>
<tr>
<td>2017-2018</td>
</tr>
<tr>
<td>2016-2017</td>
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<td>2015-2016</td>
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<td>2014-2015</td>
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<tr>
<td>2013-2014</td>
</tr>
<tr>
<td>3. The Average annual financial turnover amount is Rs 922.90 Lakhs during last three years ( FY 2014-15 , 2015-16, 2016-17) at the price level of 2017-2018.</td>
</tr>
<tr>
<td>4. Value of proposed for Satisfactorily completed as a contractor, at least one similar type of work, Construction of value Rs. 3,69,16,000/- at the price level of 2017-2018</td>
</tr>
<tr>
<td>5. Quantity of work are :</td>
</tr>
</tbody>
</table>

Contractor

No. of corrections

Executive Engineer
6. **Liquid assets and/or availability of credit facilities is is Rs. __________ (Rupees ______________________ only)**

7. **Price level of financial year 2017-18**

8. The Pre-bid meeting at Date 06.06.2018 at 15.00 hrs, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.

9. The technical bid will be opened online at the Office of the Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001 on 25.06.2018 at 12.05 Hours.

10. Address of the Employer
    
    Chief Executive Officer,
    Maharashtra Maritime Board,
    Indian Mercantile Chamber, 3rd floor,
    Ramjibhai Kamani Marg,
    Ballard Estate,
    Mumbai-400 001

11. **Identification :**
    **Bid for -**
    Bid Reference : No. __________
    Do not open before 25.06.2018 upto 12.05 hours

12. The bid should be submitted latest by 21.06.2018 on or before 17.00 hours.

13. The Financial bid will be opened after technical scrutiny at place Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber, 3rd floor, Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.

14. The Demand Draft (DD) of any Nationalised or Scheduled Bank in favour of the Chief Executive Officer, Maharashtra Maritime Board.

15. The name of Dispute Review Expert is (to be notified later)

16. Escalation factors (for the cost of works executed and financial figure to a common base value for works completed)

<table>
<thead>
<tr>
<th>Year before</th>
<th>Multiply factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>1.10</td>
</tr>
<tr>
<td>Two</td>
<td>1.21</td>
</tr>
<tr>
<td>Three</td>
<td>1.33</td>
</tr>
<tr>
<td>Four</td>
<td>1.46</td>
</tr>
<tr>
<td>Five</td>
<td>1.61</td>
</tr>
</tbody>
</table>
SECTION – 2

QUALIFICATION INFORMATION

The information to be filled in by the bidder in the following pages will be used for purposes of post qualification as provided for in clause 4 of the Instructions to bidders. This information will not be incorporated in the contract.

1. For Individual Bidders

1.1 Constitution or legal status of Bidder

(Attach Copy)

Place of registration: ————————————————————

Principal place of business: ————————————————————

Power of attorney of signatory of bid

(Attach)

1.2 Total value of civil Engineering

1.3 Construction work performed in the last three years.

2016-2017…………………

2015-2016…………………

2014-2015…………………

(Rupees in Million)

1.3.1 Work performed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided the Sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last Three years.**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Name of the Employer</th>
<th>Description of work</th>
<th>Contract No.</th>
<th>Value of Contract (Rs. Crore)</th>
<th>Date of Issue of work order</th>
<th>Stipulated period of completion</th>
<th>Actual date of completion</th>
<th>Remarks explaining reasons for delay &amp; work completed</th>
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</tbody>
</table>

Contractor                                                                               No. of corrections

Executive Engineer
# 1.3.2  Quantities of work executed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered provided in the bid document, provided further that other qualification criteria are satisfied (in the same name and style) in the last five years.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of the work</th>
<th>Name of the Employer*</th>
<th>Quantity of work performed (Cum) @ Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pile Foundation Concrete</td>
</tr>
<tr>
<td>2014-15</td>
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<tr>
<td>2015-16</td>
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<td></td>
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<tr>
<td>2016-17</td>
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</tbody>
</table>

1.4  Information on Bid capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) **Existing commitments and on-going works :**

<table>
<thead>
<tr>
<th>Description of work</th>
<th>place &amp; State</th>
<th>Contract No.</th>
<th>Name &amp; Address of employer</th>
<th>Value of Contract (Rs. Cr.)</th>
<th>stipulated period of completion</th>
<th>Value of works* remaining to be completed (Rs. Cr.)</th>
<th>Anticipated date of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
(B) Works for which bids already submitted:

<table>
<thead>
<tr>
<th>Description of work</th>
<th>Place &amp; State</th>
<th>Name and Address of Employer</th>
<th>Estimated value of Works (Rs. Cr.)</th>
<th>Stipulated period of completion</th>
<th>Date when decision is expected</th>
<th>Remark, if any</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

1.5 Availability of key items of Contractor’s Plant & Equipment essential for carrying out the Works [Ref. Clause 4.4.5]. The Bidder should list all the information requested below. Refer also to Sub-Clause 4.3(d) of the Instructions to Bidders.

<table>
<thead>
<tr>
<th>Item of Plant &amp; Equipment</th>
<th>Requirement</th>
<th>Availability Proposal</th>
<th>Remark (from whom to be purchased)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Capacity</td>
<td>Owned</td>
</tr>
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</tr>
</tbody>
</table>

1.6 Qualification and experience of key personnel required for administration and execution of the contract [Ref. 4.5.5]. Attach biographical data. Refer also to Sub-Clause 4.3(e) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Qualification</th>
<th>Year of Experience (General)</th>
<th>Year of Experience in the proposed position.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td></td>
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</tr>
<tr>
<td>Site Engineer</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Plant Engineer</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Quantity Surveyor</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Soil &amp; Material Engineer</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Design/Survey Engineer</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Site Supervisor</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Office Assistant</td>
<td></td>
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</tr>
</tbody>
</table>
1.7 Proposed Sub-Contracts and firms involved [Refer ITB Clause 4.3 (K)]

<table>
<thead>
<tr>
<th>Sanctions of the works</th>
<th>Value of Sub-Contract</th>
<th>Sub-Contract (Name &amp; Address)</th>
<th>Experience in similar work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.8 Financial reports for the last **Three years**: balance sheets, profit & loss statements, auditor’s reports (in case of companies/corporation) etc. List them below and attach copies.

1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand. Lines of credit etc. List them below and attach copies of support documents.

1.10 Name, address and telephone, telex and fax numbers of the bidder’s bankers who may provide reference if contacted by the Employer.

1.11 Information on litigation history in which the bidder is involved.

<table>
<thead>
<tr>
<th>Other party (ies)</th>
<th>Employer</th>
<th>Cause of Dispute</th>
<th>Amount involved</th>
<th>Remarks showing present status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

1.12 Statement compliance under the requirements of Sub Clause 3.2 of the Instructions to Bidders. (Name of Consultant engaged for project preparation is ________________________________  ____________________________________________________________

**DELETED**

1.13 Proposed work method and schedule. The bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the bidding Documents. [Refer ITB Clause 4.1 & 4.3(1)]

1.14 Programme

1.15 Quality Assurance Programme

2 Deleted

3 Additional Requirements

3.1 Bidders should provide any additional information required to fulfil the requirements of clause 4 of the Instructions to the Bidders, if applicable.

   (i) Affidavit
   (ii) Undertaking.
   (iii) **Affidavit additional performance security must be enclosed.**
SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES
(CLAUSE 4.3 (g) OF ITB)
BANK CERTIFICATE

This is to certify that M/s. ____________________________ is a reputed company with a good financial standing.

If the contract for the work, namely ____________________________ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs ________________________ to meet their working capital requirements for executing the above contact during the contract period.

__________________________________________________________
(Signature)
Name of Bank
Senior Bank Manager
Address of the Bank
AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s. ___________ have not abandoned any work on National Highways in India nor any contract awarded to us for such works have not been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorise(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understand and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the Department / Project implementing agency.

____________________ (Signed by Authorised Officer of the Firm)

____________________
Title of Officer

____________________
Name of Firm

____________________
DATE
UNDEARTAKING

I, the undersigned, do hereby undertake that our firm M/s. ________________________________
would invest minimum cash up to 25% of the value of work during implementation of the Contract.

__________________
(Signed by Authorised Officer of the Firm)

__________________
Title of Officer

__________________
Name of Firm

__________________
DATE
SECTION – 3
CONDITIONS OF CONTRACT
Refer SECTION - 3
Of
PART I
COMPLETE BIDDING DOCUMENT
SECTION – 4

CONTRACT DATA
## CONTRACT DATA

### Items marked “N/A” do not apply in this Contract

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Clause Reference with respect to Section - 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the Employer is <strong>Chief Executive Officer</strong>, <strong>Maharashtra Maritime Board</strong>, <strong>Indian Mercantile Chamber</strong>, <strong>3rd floor</strong>, <strong>Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.</strong></td>
<td>[Cl.1.1]</td>
</tr>
<tr>
<td>2.</td>
<td>The Engineer is <strong>Executive Engineer</strong>, <strong>Maharashtra Maritime Board</strong>, <strong>Indian Mercantile Chamber</strong>, <strong>3rd floor</strong>, <strong>Ramjibhai Kamani Marg, Ballard Estate, Mumbai-400 001.</strong></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>The Defects Liability Period is <strong>60 Months</strong> from the date of Completion.</td>
<td>[Cl.1.1 &amp; 35]</td>
</tr>
<tr>
<td>4.</td>
<td>The Start Date shall be 7 days from the date of issue of the Notice to proceed with the work.</td>
<td>[Cl.1.1]</td>
</tr>
<tr>
<td>5.</td>
<td>The Intended Completion Date for the whole of the Works is <strong>30 (Thirty) months</strong> including monsoon period after start of work with the following milestones:</td>
<td>[Cl.1.1, 17 &amp; 28]</td>
</tr>
</tbody>
</table>

#### Milestone dates:

<table>
<thead>
<tr>
<th>Physical Works to be completed</th>
<th>Period for Mild Stone</th>
<th>Period from the start date</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) <strong>Milestone 1 (work upto plinth)</strong> : 20 % of the contract price</td>
<td><strong>9 (Nine) Months</strong></td>
<td><strong>9 (Nine) Months</strong></td>
</tr>
<tr>
<td>ii) <strong>Milestone 2 (Superstructure work)</strong> : 35 % of the contract price</td>
<td><strong>15 (Fifteen) Months</strong></td>
<td><strong>24 (Twenty Four) Months</strong></td>
</tr>
<tr>
<td>iii) <strong>Milestone 3 (Internal work)</strong> : 20 % of the contract price</td>
<td><strong>3 (Three) Months</strong></td>
<td><strong>27 (Twenty Seven) Months</strong></td>
</tr>
<tr>
<td>iv) <strong>Milestone 4 (External &amp; all finishing work)</strong> : 25 % of the contract price</td>
<td><strong>3 (Three) Months</strong></td>
<td><strong>30 (Thirty) Months</strong></td>
</tr>
</tbody>
</table>

<p>| 7. | The site is <strong>Strengthening and bitumen of road at custom office to light house at varavade tal and dist. Ratnagiri.</strong> | [Cl.1.1] |
| 8. | The name and identification number of the Contract is : | [Cl.1.1] |</p>
<table>
<thead>
<tr>
<th></th>
<th>Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.</th>
<th>[Cl.1.1]</th>
</tr>
</thead>
</table>
| **Scope of Work:** | **Refer SECTION - 4**
**Of**
**PART I**
**COMPLETE BIDDING DOCUMENT** |  |
| **(B) Bridge Work—NIL.** | |  |
| **(C) Other Items** | Any other items as required to fulfil all contractual obligations as per the Bid documents. | [ Cl. 1.1 ] |
| 10. | The following documents also form part of the Contract:
Addendum issued under clause 9.2.4. pursuant to clause 10 if any | [ Cl. 2.3(9) ] |
| 11. | The law, which applies to the Contract, is the law of Union of India. | [ Cl. 3.1 ] |
| 12. | The language of the Contract documents is English | [ Cl. 3.1 ] |
| 13. | Limit of subcontracting – Not allowed | [ Cl. 7.1 ] |
| 14. | The Schedule of Other Contractors – NIL- | [ Cl. 8 ] |
| 15. | The Schedule of Key personnel - As per Annex-II to section I | [Cl. 9] |
| 16. | The minimum insurance cover for physical property, injury and death is Rs.5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, Contractor will pay additional premium necessary to make insurance valid for four occurrences always. | [Cl. 13] |
| 17. | Site investigation report—To be assessed by the contractor | [Cl. 14] |
| 18. | The site possession Dates shall be within seven days from issue of notice to proceed with the work. | [Cl. 21] |
| 19. | Fees and types of reimbursable expenses to be paid to the Dispute Review Board (To be inserted later) | [Cl. 25] |
| 20. | Appointing Authority for the Dispute Review Board—council, Indian Roads Congress, New Delhi. | [Cl. 26] |
| 21. | The period for submission of the programme for approval of Engineer shall be 21 days from the issue of letter of Acceptance | [Cl. 27.1] |
| 22. | The period between programme updates shall be 30 days. | [Cl. 27.3] |
| 23. | The amount to be withheld for late submission of an update programme shall be Rs.1.00 lakhs. | [Cl. 27.3] |
| 24. | The following events shall also be Compensation Events: | [Cl. 44] |
Substantially adverse ground conditions encountered during the course of
execution of work not provided for in the bidding document—

(i) Removal of underground utilities detected subsequently

(ii) Significant change in classification of soil requiring additional
mobilisation by the contractor e.g. ordinary soil to rock excavation

(iii) Removal of unsuitable material like marsh, debris dumps etc. not
caused by the contractor

(iv) Artesian conditions.

(v) Seepage, erosion, landslide

(vi) River training requiring protection of permanent work

(vii) Presence of historical, archaeological or religious structures,
monuments interfering with the works

(viii) Restriction of access to ground imposed by civil, judicial or
military authority.

25. The currency of the Contract is Indian Rupees

[Cl. 46]

26. The formula (e) for adjustment of prices are:

\[ R = \text{value of work as defined in Clause 47.1 of conditions of Contract} \]

**Adjustment For Labour Component:**

(i) Price adjustment for increase or decrease in the cost due to labour shall be
paid in accordance with the following formula:

\[ V_L = 0.85 \times P_L \times R \times \left\{ \frac{L_i - L_0}{L_0} \right\} \times \frac{100}{100} \]

\[ V_L = \text{Increase or decrease in the cost of work during the month under} \]
\[ \text{consideration due to changes in rates for local labour.} \]

L_0 = The consumer price index for industrial workers for the state on 28
days preceding the date of opening of bids as published by Labour
Bureau, Ministry of Labour, Government of India.

L_i = The Consumer Price Index for industrial workers for the month under consideration as published by Labour Bureau,
Ministry of Labour, Government of India.

P_L = Percentage of labour component of work.

**Adjustment For Cement Component:**

(ii) Price adjustment for increase or decrease in the cost of Cement shall be
paid in accordance with the following formula:

\[ V_c = 0.85 \times P_c \times R \times \left\{ \frac{C_i - C_0}{C_0} \right\} \times \frac{100}{100} \]

\[ V_c = \text{Increase or decrease in the cost of work during the month under} \]
\[ \text{consideration due to changes in rates for cement} \]

C_0 = The all India wholesale price index for cement on 28 days
preceding the date of opening of Bids as published by the Ministry
of Industrial Development, Government of India, New Delhi.
C = The all India average wholesale price index for cement for the
     month under consideration as published by the Ministry of
     Industrial Development, Government of India, New Delhi.

Pc = Percentage of cement component of the work.

**Adjustment For Steel Component:**

(iii) Price adjustment for increase or decrease in the cost of steel shall be paid
     in accordance with the following formula:

\[ V_s = 0.85 \times P \times R \times \frac{(S_i - S_o)}{100} \]

\[ V_s = \text{Increase or decrease in the cost of work during the month}
     \text{under consideration due to changes in rate for Steel.} \]

So = The all India wholesale price index for Steel (Bars & Rods) on 28
     days preceding the date of opening of Bids as published by the
     Ministry of Industrial Development, Government of India, New
     Delhi.

Si = The all India wholesale price index for Steel (Bars & Rods) on 28
     days preceding the date of opening of Bids as published by the
     Ministry of Industrial Development, Government of India, New
     Delhi.

Pc = Percentage of cement component of the work.

**Note:** For the application of this clause, index of Bars and Rods
has been chosen to represent steel group.

(iv) Adjustment For Bitumen Component:

Price adjustment for increase or decrease in the cost of bitumen shall be
paid in accordance with the following formula:

\[ V_b = 0.85 \times P_b \times R \times \frac{(B_i - B_o)}{B_o} \]

\[ V_b = \text{Increase or decrease in the cost of work during the month under}
     \text{consideration due to changes in rates for bitumen.} \]

B_o = The official retail price of bitumen at the IOC depot at nearest centre
     on the day 28 days prior to the date of opening of bids.

B_i = The official retail price of bitumen at the IOC depot at nearest centre
     for the 15th day of the month under consideration.

P_b = Percentage of bitumen component of the work.

(v) Adjustment of POL (Fuel and Lubricant) Component:

Price adjustment for increase or decrease in the cost of POL (fuel and
lubricant) shall be paid in accordance with the following formula:

\[ V_f = 0.85 \times P_f \times R \times \frac{(F_i - F_o)}{F_o} \]
<table>
<thead>
<tr>
<th><strong>Note</strong>: For the application of this clause, the price of High-Speed Diesel &amp; Oil has been chosen to represent fuel &amp; lubricants group.</th>
</tr>
</thead>
</table>

### Adjustment of Plant and Machinery Spares Component:

(vi) Price adjustment for increase or decrease in the cost of plant and machinery spares procured by the contractor shall be paid in accordance with the following formula:

\[ V_p = 0.85 \times P_p /100 \times (P_i - P_o) / P_o \]

\[ V_p \] = Increase or decrease in the cost of work during the month under consideration due to changes in rates for plant and machinery spares.

\[ P_p \] = All India wholesale price index for Heavy Machinery and Parts on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

\[ P_i \] = All India average wholesale price index for heavy machinery and parts for the month under consideration as published by the Ministry of Industrial Development, Government of India, New Delhi.

\[ P_o \] = Percentage of plant and machinery spares component of the work

**Note**: For the application of this clause, index of Heavy Machinery and parts has been chosen to represent the plant and machinery spares group.

### Adjustment of Other Materials Component:

(vii) Price adjustment for increase or decrease in the cost of local materials other than cement, Steel, bitumen, and POL procured by the contractor shall be paid in accordance with the following formula:

\[ V_m = 0.85 \times P_m /100 \times R \times (M_i - M_o) / M_o \]

\[ V_m \] = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, Steel, bitumen, and POL.

\[ P_m \] = Percentage of other materials component of the work

**Note**: For the application of this clause, the price of High-Speed Diesel & Oil has been chosen to represent fuel & lubricants group.
Mₐ – The all India wholesale price index (all Commodities) on 28 days preceding the date of opening of Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

Mo = The all India wholesale price index (all Commodities) on for the month under consideration as published by the Ministry of Industrial Development, Government of India, New Delhi.  

Pₗₐ = Percentage of local materials component (other than cement, steel, bitumen and POL) of the work.

The following percentage will govern the price adjustment for the entire contract:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Labour</td>
<td>Pₗₑₐ = 37%</td>
</tr>
<tr>
<td>2</td>
<td>Cement</td>
<td>Pₗₑₐ = 14%</td>
</tr>
<tr>
<td>3</td>
<td>Steel (TMT+St.steel)</td>
<td>Pₗₑₐ = 29%</td>
</tr>
<tr>
<td>5</td>
<td>POL</td>
<td>Pₗₑₐ = 7%</td>
</tr>
<tr>
<td>6</td>
<td>Plant &amp; Machinery Spares</td>
<td>Pₗₑₐ = -</td>
</tr>
<tr>
<td>7</td>
<td>Other Materials</td>
<td>Pₗₑₐ = 13%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

27. The Proportion of payments retained (retention money) shall be 6% from each bill subject to a maximum of 5% of final contract price.

28. Amount of liquidated damages for delay in completion of works

(I) for Whole of work

\[
\text{(1/2000)th of the initial contract price rounded off to the nearest thousand per day i.e. Rs. 2,82,000/-(Rs. Two lakh Eight Two thousand only) per day}
\]

(II) for sectional completion
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Maximum limit of liquidated damages for delay in completion of work</td>
<td>(Whatever specified in Item 6 of Contract Data) (\frac{1}{200})th of initial contract price for section of work under</td>
</tr>
<tr>
<td></td>
<td>(i) Milestone I rounded off to the nearest thousand per day i.e. Rs. 5,64,000/- (Rs. Five Lakhs Sixty-Four Thousand only) per day.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ii) Milestone II rounded off to the nearest thousand per day i.e. Rs. 9,86,000/- (Rs. Nine Lakh Eighty-Six Thousand only) per day.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iii) Milestone III rounded off to the nearest thousand per day i.e. Rs. 5,64,000/- (Rs. Five Lakhs Sixty-Four Thousand only) per day.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(iv) Milestone IV rounded off to the nearest thousand per day i.e. Rs. 7,05,000/- (Rs. Seven Lakh Five Thousand only) per day.</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Maximum limit of liquidated damages for delay in completion of work</td>
<td>10 percent of the Initial contract Price rounded off to the nearest thousand i.e. Rs. 5,64,00,000/- (Rs. Five Crore Sixty-Four lakhs only)</td>
</tr>
<tr>
<td>30</td>
<td>Amount of Bonus for early completion of whole of the works</td>
<td>1 percent of the Initial contract Price, (Part of a month to be excluded), rounded off to the nearest thousand. Per month.</td>
</tr>
<tr>
<td>31</td>
<td>Maximum limit of bonus for early completion of work</td>
<td>1 percent of the contract price rounded off to the nearest thousand.</td>
</tr>
<tr>
<td>32</td>
<td>The amounts of the advance payment are.</td>
<td>[Cl. 49] [Cl. 50] [Cl. 51 &amp; 52]</td>
</tr>
<tr>
<td>Nature of advance</td>
<td>Amount (Rs.) Conditions to be fulfilled</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>i. Mobilization</td>
<td>10% of the Contract price On submission of unconditional Bank Guarantee (to be draw before the end of 20% of Contract Period). The Contractor may furnish four bank Guarantees of 2.5% each, Valid for full period.</td>
<td></td>
</tr>
<tr>
<td>ii. *EQUIPMENT</td>
<td>90% for new and 50% of depreciated value for old equipment. Total amount will be subject to a maximum of 5% of the Contract Price. After the equipment is brought to site (provided the Engineer is satisfied that the equipment is required for performance of the contract) and on submission of unconditional Bank Guarantee for amount of advance.</td>
<td></td>
</tr>
</tbody>
</table>
| iii. *Secured advance for non-perishable materials brought to site | 75% of Invoice Value  

   a) The materials are in accordance with the specification for works.  

   b) Such materials have been delivered to site, and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer. The Contractor shall store the bulk material in measurable stacks;  

   c) The Contractor’s records of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer and such records shall be available for inspection by the Engineer.  

   d) The contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Engineer for the purpose of valuation of the materials and providing evidence of ownership and payment thereof.  

   e) Ownership of such materials shall be deemed to vest in the Employer for which the Contractor has submitted an Indemnity Bond in an acceptable format, and  

   f) The quantities of materials are not excessive and shall be used within a reasonable time as determined by the Engineer. |

(The advance payment will be paid to the Contractor no later than 28 days after fulfilment of the above conditions.)
The advance loan shall be repaid with percentage deductions from the interim payments certified by the Engineer under the Contract. Deductions shall commence in the next Interim Payment Certificate following that in which the total of all such payments to the Contractor has reached not less than 20 percent of the Contract Price or 6 (Six) months from the date of payment of first instalment of advance, whichever period concludes earlier, and shall be made at the rate of 20 percent of the amounts of all Interim Payment Certificates until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clauses 17 and 28.

<table>
<thead>
<tr>
<th>34.</th>
<th>Repayment of Secured advance</th>
<th>[Cl. 51.4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>The advance shall be repaid from each monthly payments to the extent materials for which advance was previously paid pursuant to Clause 51.4 of G. C. C. have been incorporated into the works.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>35.</th>
<th>The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price:</th>
<th>[Cl. 52]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Security for 2 percent of contract price plus Rs....................... (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Standard form of Performance Security acceptable to the Employer shall be an unconditional Demand Draft (DD) of the type as presented in Section 8 of the Bidding Documents.

<table>
<thead>
<tr>
<th>36.</th>
<th>The Schedule of Operating and Maintenance Manuals</th>
<th>N/A [Cl. 58]</th>
</tr>
</thead>
</table>

| 37. | The date by which “as-built” drawings (in scale as directed) in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be. | [Cl. 58] |

| 38. | The amount to be withheld for failing to supply “as-built” drawings by the date required is Rs. 1.00 Lakh. | [Cl. 58] |

| 39. | The following events shall also be fundamental breach of contract: “The Contractor has contravened Sub-Clause 7.1 and Clause 9 of GCC.” | [Cl. 59.2] |

| 40. | The Percentage to apply to the value of the work not completed representing the Employer’s additional cost for completing the Works shall be 20 percent. | [3, Cl. 60] |
SECTION – 5

TECHNICAL SPECIFICATION

Refer SECTION - 5

Of

PART I

COMPLETE BIDDING DOCUMENT
SECTION – 6
FORM OF BID
FORM OF BID

Description of the Work: Strengthening and bitumening of road at custom office to light house at varavade tal and dist. Ratnagiri.

Executive Engineer,
Maharashtra Maritime Board,
Mumbai

1. We offer to execute the works described above and remedy any defects therein in conformity with the conditions of contract, specification, drawings, Bill of Quantities and Addenda for the sum(s) of ..........................................................

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer’s notice to commence and to complete the whole of the Works comprised in the Contract within the time stated in the document.

3. We agree to abide by this Bid for the period of 120 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

4. Unless and until a format Agreement is prepare and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive.

6. We accept the appointment of Shri. ........................................................ as the Dispute Review Expert.

(OR)
We do not accept the appointment of Shri. ........................ as the Dispute Review Expert and propose instead that Shri. ........................ be appointed as Dispute Review Expert, whose BIO-DATA is attached.

Dated this ....................... day of ......................... 20.................

Signature ___________________ in the capacity of __________duly authorised sign bids for and on behalf of ................................................................................................................................. (in block capitals or typed)

Address
...............................................................................................................................

Witness
...............................................................................................................................

Address
...............................................................................................................................

Occupation
...............................................................................................................................

# Note-The bidder will submit this form online without his financial offer. The bidder shall fill the rates online in the BOQ sheet provided in the e-tender portal only.
SECTION – 7

BILL OF QUANTITIES
BILL OF QUANTITIES

Preamble

1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Technical Specifications and Drawings.

2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.

3. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.

4. The rates and prices shall be quoted entirely in Indian Currency.

5. A rate or price shall be entered against each item in the Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall deemed to be covered by other rates and prices entered in the Bill of Quantities.

6. The whole cost of complying with the provisions of the Contract shall be included in the terms provided in the priced Bill of Quantities and where no items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

7. General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.

8. The method of measurement of completed items of work for payment shall be in accordance with the specification for Road and Bridge Works published by the Ministry of Road Transport & Highways, (Vth Revision) April 2013.

9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.

10. Rock is defined as all materials which, in the opinion of the Engineer, require blasting or the use of metal wedges and sledge hammers or the use of compressed air drilling for its removal and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.
SCHEDULE OF MATERIALS
(To be brought by the Contractor at his own cost)

NAME OF WORK :-

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item of work</th>
<th>Approximate Quantity to be brought</th>
<th>Unit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
SCHEDULE ‘A’

NAME OF WORK :-

(Schedule of Materials to be supplied by the Department)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item of Material</th>
<th>Approximate Quantity to be supplied</th>
<th>Unit</th>
<th>Rate at which the materials will be charged to the contractor</th>
<th>place of delivery</th>
</tr>
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<tbody>
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<td>Nil</td>
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</table>

Note: 1) The persons or firm submitting the tender should see that the rates in the above schedule are filled up by the Executive Engineer on the issue of the form prior to submission of the tender.

2) Contractors will have to make arrangement themselves for securing structural steel under the permit to be obtained by themselves. Department will however tender necessary help to contractor.

3) Empty Tar drums are the property of department. If the Contractor has not returned empty tar drums to department recovery at the rate of Rs. 50/- per drum will be made from the contractor.

4) 40% of the empty cement bags issued to the contractor are to be returned to the department. Otherwise recovery at the rate of Rs. 5/- per bag will be made from the contractor.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Unit</th>
<th>Description of Item</th>
<th>Rate</th>
<th>Rs in Words</th>
<th>Per Unit</th>
<th>Amount</th>
<th>Specification Number</th>
<th>Additional Specification if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td><strong>Item No 1</strong>: Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50m. and spreading for embankment or stacking as directed.</td>
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<td></td>
<td>MORTH 301</td>
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<tr>
<td>2345.99</td>
<td>Cubic Metre</td>
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<tr>
<td>1563.99</td>
<td>Cubic Metre</td>
<td><strong>Item No. 2</strong>: Excavation for roadway in hard rock by wedging and chiselling or line drilling including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50m. and spreading for embankment or stacking as directed.</td>
<td></td>
<td></td>
<td></td>
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<td>MORTH 301</td>
<td></td>
</tr>
<tr>
<td>Item No.</td>
<td>Description</td>
<td>Per One Cubic Metre</td>
<td>Rate</td>
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<tr>
<td>3</td>
<td>Conveying materials obtained from road cutting including all lifts, laying in layers of 20cm to 30cm. breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50m. to 300m. inclusive from the site of excavation to the site of deposition as directed.</td>
<td>MORTH 305</td>
<td>-</td>
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<tr>
<td>4</td>
<td>Providing trap rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete.</td>
<td>Bd.A. 12 Page No. 264</td>
<td>-</td>
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<tr>
<td>5</td>
<td>Supplying 80 mm laterite stone metal at the road side for metal including conveying &amp; stacking etc. complete. (50 metre initial lead) Hand broken.</td>
<td>-</td>
<td>The work shall be carriedout as per wording of item and as directed by Engineer -In-Charge</td>
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<tr>
<td>6</td>
<td>Supplying 60 mm laterite stone metal at the road side for metal including conveying &amp; stacking etc. complete. (50 metre initial lead) Hand broken.</td>
<td>-</td>
<td>The work shall be carriedout as per wording of item and as directed by Engineer -In-Charge</td>
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<tr>
<td>7</td>
<td>Supplying hard murum at the road site, including conveying and stacking complete.</td>
<td>MORTH 408</td>
<td>-</td>
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<tr>
<td>Item No</td>
<td>Cubic Metre</td>
<td>Square Metre</td>
<td>Per One Cubic Metre</td>
<td>MORTH 408</td>
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<td>8</td>
<td>749.51</td>
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<tr>
<td>Item No 8</td>
<td>Spreading oversize 80 millimeter and size 60 millimeter laterite stone metal including sectioning etc. complete.</td>
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<td>The work shall be carried out as per wording of item and as directed by Engineer -In-Charge</td>
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<td>9</td>
<td>578.880</td>
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<tr>
<td>Item No. 9</td>
<td>Spreading hard murum for side width etc. complete</td>
<td></td>
<td></td>
<td>MORTH 408</td>
<td></td>
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<td>10</td>
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<tr>
<td>Item No. 10</td>
<td>Compacting for 80 millimeter laterite metal with power roller including necessary labour, materials and artificial watering etc. complete.</td>
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<td>The work shall be carried out as per wording of item and as directed by Engineer -In-Charge</td>
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<td>11</td>
<td>1830.90</td>
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<tr>
<td>Item No. 11</td>
<td>Compacting for 60 millimeter laterite metal with power roller including necessary labour materials and artificial watering etc. complete.</td>
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<td>The work shall be carried out as per wording of item and as directed by Engineer -In-Charge</td>
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<td>12</td>
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<td>Item No. 12</td>
<td>Compacting the hard murum side widths including laying in layers on each side with power roller including artificial watering etc. complete.</td>
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<td>MORTH 408</td>
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Contractor: No. of corrections: Executive Engineer:
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<tr>
<th>Item No.</th>
<th>Description</th>
<th>Rate</th>
<th>Unit</th>
<th>Rate</th>
<th>Unit</th>
<th>CD.7 Page.No.</th>
<th>Executive Engineer</th>
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</thead>
<tbody>
<tr>
<td>13</td>
<td><strong>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</strong></td>
<td>18.75</td>
<td>Running Metre</td>
<td>1830.90</td>
<td>Square Metre</td>
<td>CD.7 Page.No. 162</td>
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<tr>
<td>14</td>
<td><strong>Providing and constructing 75 mm. thick Modified Penetration Macadam (MPM) road surface including all materials, preparing the existing road surface, spreading 40 mm. stone metal layers 30% crusher broken metal + 70% Hand broken (by breaking rubble obtained by blasting) heating and spraying the bitumen of VG-30 grade @ 2 Kg/sqm, spreading 12 mm.size chips compacting with three wheel static roller having weight 8 to 10 MT. to acheive the desired degree of compaction as per Technical Specification Clause 506 etc. complete. Including picking of existing WBM surface.</strong></td>
<td>1830.90</td>
<td>Square Metre</td>
<td>IRC-SP-20, 2002 Clause No. 8.7.3</td>
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<td>Item No.</td>
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<td>15</td>
<td>Item No. 15 : Open Graded Premix Surfacing: Providing and Laying OGC 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates premixed with bituminous binder transported to site with VTS, laid over a previously prepared surface, finished to the required grade, level, alignment, and rolling to achieve the desired compaction VG-30 Bitumen, including providing and laying seal coat sealing voids in a bituminous surface laid to the specified level and cross fall using Type A seal coat but including Providing and applying tack coat on the prepared surface heating by flames in Boiler and spraying bitumen with sprayer on Dry / Hungry B.T. surface 3 kg/10 sqm. VG-30 bulk bitumen. For Bitumen VG-30 bulk--USING drum mix type hot mix plant with SCADA, Paver and Vibratory roller.</td>
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<td>16</td>
<td>Item No. 16 : Excavation for foundation in earth, soils of all types, sand, gravel, soft murum including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete.</td>
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<tr>
<td>17</td>
<td>Item No 17 : Excavation for foundation in hard rock by blasting including shoring and strutting as necessary and disposing off excavated stuff as directed etc. complete.</td>
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<tr>
<td>Item No.</td>
<td>Description</td>
<td>Per One Cubic Metre</td>
<td>CD.-3 Page No.</td>
<td>Notes</td>
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<td>18</td>
<td>Item No. 18: Providing and laying in situ / ready mix cement concrete of M10 proportion with trap metal in foundation including necessary form work, compacting and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer)) with SCADA with Natural / VSI standard Artificial Sand</td>
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<td>19</td>
<td>Item No. 19: Providing cast in situ / ready mix M15 grade cement concrete for head walls of CD work / retaining walls etc. including necessary form work, compaction, finishing and curing etc. complete. (with reversible drum type mixer/ concrete batch mix plant (pan mixer) with SCADA with Natural / VSI standard Artificial Sand, cement 4.05 bags/cumt)</td>
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<tr>
<td>20</td>
<td>Item No. 20: Payment of Royalty charges for supply of material</td>
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<td>The work shall be carried out as per wording of item and as directed by Engineer -In-Charge</td>
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<tr>
<td>1</td>
<td>Test 1) Sieve analysis</td>
<td>Per One Test</td>
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<tr>
<td>2</td>
<td>Test 2) Crushing Value Water Absorption &amp; Specific Gravity</td>
<td>Per One Test</td>
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<tr>
<td>3</td>
<td>Test 3) Penetration Softening point Flash &amp; Fire point, Specific Gravity</td>
<td>Per One Test</td>
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<tr>
<td>Item No.</td>
<td>Test</td>
<td>Description</td>
<td>Per One Test</td>
<td>Cubic Metre</td>
<td>Page No.</td>
<td>Contractor</td>
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<td>1.00</td>
<td>Test</td>
<td>4) Water Absorption, Impact &amp; crushing value</td>
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<td>1.00</td>
<td>Test</td>
<td>5) Abrasion Value.</td>
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<td>1.00</td>
<td>Test</td>
<td>6) Flakiness &amp; Elongation Index</td>
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<tr>
<td>1.00</td>
<td>Test</td>
<td>7) Stripping Value.</td>
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<td>1.00</td>
<td>Test</td>
<td>8) Extraction for Carpet</td>
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<tr>
<td>2.00</td>
<td>Test</td>
<td>9) Compressive strength</td>
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**Sub Estimate 2 (Approach road to jetty)**

<table>
<thead>
<tr>
<th>Item No. 22</th>
<th>1692.76</th>
<th>Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 m. beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete. (Lift upto 1.5 m.)</th>
<th>Per One Cubic Metre</th>
<th>B&amp;A Page No. 259</th>
<th>Contractor</th>
</tr>
</thead>
</table>

<p>| Item No. 23 | 612.63 | Excavation for foundation in Hard rock by chiselling, wedging, line drilling, etc. including trimming and levelling the bed, removing the excavated material up to a distance of 50 metres beyond the building area stacking as directed, dewatering and back filling with available earth/murum watering, ramming etc. complete. (Lift upto 1.5 m.) | Per One Cubic Metre | B&amp;A Page No. 260 | Contractor |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Cubic Metre</th>
<th>Item No.</th>
<th>Description</th>
<th>Per One Cubic Metre</th>
<th>Page No.</th>
<th>Executive Engineer</th>
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<tr>
<td>284.78</td>
<td>Cubic Metre</td>
<td><strong>24</strong>: Providing trap rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete.</td>
<td></td>
<td>Bd.A. 12 Page No. 264</td>
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<tr>
<td>152.93</td>
<td>Cubic Metre</td>
<td><strong>25</strong>: Providing and laying Cast in situ/Ready Mix cement concrete in M15 of trap metal for bed blocks, foundation blocks and such other items including bailing out water, plywood/steel formwork, laying/pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.), with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With natural sand/V.S.I. quality Artificial Sand</td>
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<td>Bd.E.4 Page No. 289 and B-7, Page No.38</td>
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<tr>
<td>1567.90</td>
<td>Cubic Metre</td>
<td><strong>26</strong>: Providing and laying in situ / ready mix M-25 plain cement concrete of trap metal for cast in situ piers, abutment, returns, wings etc. including provision of &quot;V&quot; shaped false joints to form suitable panels on the faces to approve design with compacting by vibrating and curing complete, including plywood/steel form work centering (excluding dewatering by means of pump) and including bailing out water and curing finishing in CM 1:3 etc. complete</td>
<td></td>
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<td>The work shall be carried out as per wording of item and as directed by Engineer-In-Charge</td>
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<tr>
<td>Item No.</td>
<td>Description</td>
<td>Rate (Running Metre)</td>
<td>Rate (Cubic Metre)</td>
<td>Notes</td>
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<tr>
<td>27</td>
<td>Providing weep holes in brick masonry/plain/reinforced concrete abutment, wing wall / return wall with 100mm diameter AC pipe extending through the full width of the structure with slope of 1V: 20H towards drawing face as per drawings and technical specifications etc. complete.</td>
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<td>28</td>
<td>Back filling behind abutment, wing wall and return wall as per drawings and technical specifications etc. complete. (by granular material)</td>
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<td>29</td>
<td>Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 cm to 20 cm including watering and compaction etc. complete.</td>
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<tr>
<td>30</td>
<td>Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.</td>
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<tr>
<td>No.</td>
<td>Unit</td>
<td>Description</td>
<td>Rate</td>
<td>Page Ref.</td>
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<tr>
<td>2.846</td>
<td>Metric Tonne</td>
<td><strong>Item No. 31</strong>: Providing and fixing in position TMT - FE - 500 bar reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams columns, canopies, staircases, newels, chajjas, lintels, pards, copings, fins, arches etc. as per detailed designs, drawings and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.</td>
<td>Per One Metric Tonne</td>
<td>Bd.F.17, Page No. 306</td>
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<tr>
<td>904.80</td>
<td>Cubic Metre</td>
<td><strong>Item No. 32</strong>: Supplying and Laying trap stone rubble weighing 50 to 100 Kilogramme for Subarmour layer including quarrying conveying with all the leads and lifts and placing at required places in required line, level, slope and section as directed etc. complete under tidal conditions.</td>
<td>Per One Cubic Metre</td>
<td>Rd, 19 Page - 197; Rd 29 Page - 193; Rd 27 Page - 192</td>
<td>The work shall be carried out as per wording of item and as directed by Engineer - In-Charge</td>
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<tr>
<td>1004.85</td>
<td>Cubic Metre</td>
<td><strong>Item No. 33</strong>: Supplying and Laying trap stone rubble weighing 300 to 500 Kilogramme for apron / armour layer including quarrying, conveying with all the leads, lifts, laying in required line, level, slope including necessary equipment and machinery as directed etc. complete in the tidal conditions.</td>
<td>Per One Cubic Metre</td>
<td>Rd, 19 Page - 197; Rd 29 Page - 193; Rd 27 Page - 192</td>
<td>The work shall be carried out as per wording of item and as directed by Engineer - In-Charge</td>
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<td><strong>Item No 34</strong>: Carry out quality control tests</td>
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<td>PWD Handbook, IS-56 Part-II, MORT&amp;H Specification-1716, IS-269 12269</td>
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<td>1.00</td>
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<td>a) Concrete Mix design (With all tests on basic materials)</td>
<td>Per One Test</td>
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<td>49.00</td>
<td>Test</td>
<td>b) Compressive strength of cement concrete tests</td>
<td>Per One Test</td>
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<td>Description</td>
<td>Per One Test</td>
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<tr>
<td>2.00</td>
<td>c) Crushing value / Compressive strength, Water Absorption &amp; Specific Gravity</td>
<td>-</td>
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<tr>
<td>1.00</td>
<td>d) Steel Bar Testing (Above 16 mm Set of 3 bars) (Tensile strength, % elongation, Yield stress, weight per meter, Bend /Rebend test, proof stress)</td>
<td>-</td>
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Total Rs.

Add 12 % for GST (6% CGST + 6% SGST)

Say Rs

_Rupees in words:-_
SECTION – 8
SECURITIES AND OTHER FORMS
BID SECURITY (BANK GUARANTEE)

WHEREAS, _____________________________ [Name of bidder] (hereinafter called “the Bidder”) has submitted his Bid dated ______________ (date) for the construction of __________________ [name of Contract hereinafter called “the Bid”]

KNOW ALL PEOPLE by these presents that We ___________________________ [name of Bank] of ___________________________ [ name of Country] having our registered office at ___________________________________ (hereinafter called “the Bank”) are bound unto _________________________ [name of Employer] (hereinafter called “the Employer”) in the sum of ________________________ * for which payment well and truly to be made to the said Employer the Bank itself, his successors and assigns by these presents.

SEALED with the Common Seal of the Said Bank this __________ day of __________, 20 __

THE CONDITIONS of this obligation are:

1. If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of bid.

OR

2. If the Bidder having been notified to the acceptance of his bid by the Employer during the period of bid validity:

   (a) Fails or refuses to execute the Form of Agreement in accordance with Instructions to Bidders, if required; or

   (b) Fails or refuses to furnish the performance Security, in accordance with the Instructions to Bidders; or

   (c) does not accept the correction of the Bid Price pursuant to Clause 27

We undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date ____________________________ ** days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extensions(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE_____________________ SIGNATURE ______________________
WITHNESS_________________ SEAL _______________________

[ Signature, name and address]

* The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

** 45 days after the end of the validity period of the bid Date should be inserted by the Employer before the Bidding documents are issued.
ADDITIONAL PERFORMANCE SECURITY BANK GUARANTEE

To,

Executive Engineer,
Integrated Unit (P.W.) Division,
2nd Floor, Bandhkam Bhavan,
Murzban Road, Fort, Mumbai - 400 001.

WHEREAS ________________________________ [name and address of Contractor] (hereafter called “The Contractor”) has undertaken, in pursuance of Contract No. ___________ dated __________ to execute ________________ [name of Contract and brief description of Works] (hereinafter called “the Contractor”)

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of ______________________ [amount of guarantee]* __________________________(in words), such sums being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ____________________________ [amount of guarantee] as aforesaid without your needing to prove or to show ground or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between your and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid 28 days from the date of expiry of the Defect Liability Period.

Signature and Seal of the Guarantor ________________

Name of Bank _________________________________

Address ______________________________________

Date ____________

• An Amount shall be inserted by the Guarantor, representing the percentage the contract price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.
BANK GUARANTEE FOR ADVANCE PAYMENT

To,

_____________________________ [name of Employer]

_____________________________ [address of Employer]

_____________________________ [name of Employer]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, Sub-clause 51.1 (“Advance payment”) of the above mentioned Contract, ______________________ [name and address of Contractor] (hereafter called “The Contractor”) shall, in virtue of ______________________ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of ___________ [amount of Guarantee]* _____________________________ (in words).

We, the ______________________ [bank of financial institution], as interested by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to ______________________ [name of Employer] on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding ___________ [amount of Guarantee]* ____________________________________ (in words).

We further agree that no change or addition to or other modification of the terms of the Contractor or Works to be performed there under or of any of the Contract documents which may be made between ______________________ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until ____________________ [name of Employer] receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and Seal ______________________________

Name of Bank/Financial Institution ______________________

Address ______________________________________

Date ______________________

* An Amount shall be inserted by the Bank or Financial Institution, representing the amount of the advance payment and denominated in Indian Rupees.
INDENTURE FOR SECURED ADVANCES
FROM 31

(For use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time.)

This indenture made the ___________ day of __________, 20 __________ BETWEEN ________________ (hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the employer of the other part.

Whereas by an agreement dated ______________ (hereinafter called the said agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the employer that he may be allowed advanced on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to execute at rates fixed for the finished works (inclusive of the cost of materials and labour and other charges)

AND WHEREAS the employer has agreed to advance to the contractor the sum of Rupees ________________ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the contractor on ___________ and the employer has reserved to himself the option of making any further advance or advances on the security of other materials brought by the contractor to the site of the said works.

Now THIS INDENTURE WITNESSE that in pursuance of the said agreement and in consideration of the sum of Rupees ________________ on or before the execution of these presents paid to the contractor by the employer (the receipt where of the contractor doth hereby acknowledge) and of such further advance (if any) as may be made to him as aforesaid the contractor doth hereby covenant and agree with the President and declare as follows:

1. That the said sum of Rupees ________________ so advanced by the employer to the contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the contractor in or towards expending the execution of the said works and for no other purpose whatsoever.

2. That the material details in the said Account of Secured Advances which have been offered to and accepted by the employer as security are absolutely the contractor's own propriety and free from encumbrances of any kind the contractor will not make any application for or receive a further advance of the security of materials which are not absolutely his own property and free from encumbrances of any kind and the contractor indemnified the employer against all claims to any materials in respect of which an advance has been made to him as aforesaid.

3. That the materials detailed in the said account of Secured Advance and all other materials on the security of which any further advance or advance may hereafter be made as aforesaid (hereafter called the said...
(4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor’s custody and on his own responsibility and shall at all times be open to inspection by the Engineer or any officer authorised by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the Engineer.

(5) That the said materials shall not be any account be removed from the site of the said works except with the written permission of the Engineer or an officer authorized by him on his behalf.

(6) That the advance shall the Employer of the price payable in full when or before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payment is made to the Contractor on account of work done than on the occasion of each such payment the Employer will be at liberty to make a recovery from the contractor’s bill for such payment by deducting therefrom the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

(7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Employer shall immediately on the happening of such default be repayable by the Contractor to be the Employer together with interest thereon at twelve percent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the Employer in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the Employer to reply and pay the same respectively to him accordingly.

(8) That the contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _________________________ and any further sum or sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that no without prejudice to the power contained therein if and whenever the covenant for payment and repayment here-in-before contained shall become enforceable and the money owing shall not be paid in accordance there with the Employer may at any time thereafter adopt all or any of the following courses as he may deem best:

(a) Seize and utilise the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the
amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor, he is to pay same to the Employer on demand.

(b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Employer under these presents and pay over the surplus (if any) to the Contractor.

(c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said advance shall not be payable.

(9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.

(10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail, and in the event of any dispute or difference arising over the construction or effect of these presents the matter which has not been here-in before expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.
Letter of Acceptance

(Letterhead paper of the Employer)

To,

________________________ [name and address of the Contractor]

Dear Sirs,

This is to notify you that your online bid dated ____________ for execution of the
_________________________________
_____ (name of he contract and identification number, as given in
the Instructions to Bidders) for the Contract Price of Rupees ___________________________
(______________) (amount in words and figures), as corrected and modified in accordance with the
Instructions to Bidders is hereby accepted by our agency.

We accept / do not accept that _____________________ be appointed as the Adjudicator.

You are hereby requested to furnish Performance Security, in the form detailed in Para 34.1 of ITB for an
amount equivalent to Rs. _____________ within 07 days of the receipt of the letter of acceptance valid up to
28 days from the date of expiry of defects Liability Period i.e. up to _______________ and sign the contract,
falling which action as stated in Para 34.2 of ITB will be taken.

Yours faithfully,

Authorised Signature
Name and title of Signatory
Name of Agency

1 Delete “Corrected and” or “and modified” if only one of these actions applies. Delete as corrected and
modified in accordance with the Instructions to Bidders, if corrections or modifications have not been
affected.

2 To be used only if the contractor disagrees in his Bid with the Adjudicator proposed by the Employer in the “
Instructions to Bidders”.

Contractor No. of corrections Executive Engineer
Issue of Notice to proceed with the work
(Letter head paper of the Employer)

___________________(Date)

To,
_____________________ [name and address of the Contractor]

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 34.1 and signing of the Contract for the Construction of Proposed Family Court Building on Survey No 341, CTS No 629 at Bandra (East) Mumbai.

Bid Price of Rs.____________ .

You are hereby instructed to proceed with the execution of the said works in accordance with the documents.

Yours faithfully,

(Signature, name and title of Signatory
Authorised to sign on behalf of Employer)
AGREEMENT FORM

Agreement

This agreement, made the ___________ day of ____________ between ________ (name and address of the Employer) [hereinafter called “the Employer] and ______________________ (name and address of contractor) hereinafter called “the Contractor” of the other part.

Whereas the employer is desirous that the Contractor execute _______________________(name and identification number of Contractor) (hereinafter called “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein, at a cost of Rs__________

NOW THIS AGREEMENT WITNESSTH as follows :

(1) In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read and construed as part of this Agreement.

(2) In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to all aspects with the provisions of the contract.

(3) The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

(4) The following documents shall be deemed to form and be ready construed as part of this agreement viz.
   i) Letter of Acceptance
   ii) Notice to proceed with the works
   iii) Contractor’s Bid
   iv) Condition of contract : General and Special
   v) Contract Date
   vi) Additional condition
   vii) Drawings
   viii) Bill of Quantities and
   ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to have caused this Agreement to be executed the day and year first before written.

   The Common Seal of __________ was hereunto affixed in the presence of :

Signed, Sealed and Delivered by the said __________________________
in the presence of :

Binding Signature of Employer ________________________________

Binding Signature of Contractor ________________________________
UNDEARTAKING

[Bid Validity Form]

I, the undersigned do hereby undertake that our firm M/s. _________________ agree to abide by this bid for a period _______ days for the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

DATE
SECTION – 9
DRAWINGS
DOCUMENTS TO BE FURNISHED BY THE BIDDER

(Attached)
SECTION – 10

BAR CHART
DOCUMENTS TO BE FURNISHED BY THE BIDDER
(Attached)