



# **NASHIK MUNICIPAL SMART CITY DEVELOPMENT CORPORATION LIMITED**

**E- Tender**

for

**Development of Nehru Garden  
Nashik**

Executive Engineer  
Nashik Municipal Smart City Development Corporation Limited  
Nashik



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Nashik Municipal Smart City Development Corporation Limited  
Nashik

**Name of work: -Development of Nehru Garden**  
Nashik Municipal Smart City Development Corporation Limited limits

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Executive Engineer-II

Nashik Municipal Smart City  
Development Corporation Limited



# NOTICE INVITING TENDER



**NASHIK MUNICIPAL SMART CITY  
DEVELOPMENT CORPORATION LIMITED  
NASHIK**

**E-Tender Notice No. 02 of Year 2017-18**

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Main Portal: **www.mahatenders.gov.in**

Digitally Signed and unconditional Online tenders in **B-1** form (Percentage Rate) for the following work are invited by the Executive Engineer, Nashik Municipal Smart City Development Corporation Limited

from the contractors registered or unregistered with P.W.D. Govt. of Maharashtra, C.P.W.D. / M.E.S. / Indian Railway / M.E.S/ M.I.D.C. / M.J.P. / B.P.T. / M.C.G.M or Nashik Municipal Smart City Development Corporation Limited, Mumbai in appropriate class will be also eligible for tendering subject to production of the solvency certificate to the extent of 20 % of the estimated cost put to tender. The Tender documents are available on website from 02/06/2017 on 10.00 hrs.

Sr. No	Name of Work	Estimated Cost ( In Rupees)	Cost of Blank Tender (Rupees)	E.M.D. (In Rupees)	S.D. ( In Rupees)	Registration Class	Time Limit
1	Development of Nehru Garden under Nashik Municipal Smart City Development Corporation Limited, Nashik	12,075,755	10090	1 % of estimated cost	5 % of estimate cost	Registration not required but experience in plantation essential	6 months (including monsoon)

Those contractors who are participating in e-Tendering at first time will have to get Login ID & password from the above portal.

For any information and help for the uploading & downloading e-tender, bidder may contact to the service provider

All the information about E- Tendering is available on above website.

Tender No.- 02

Date :- 02 / 06 /2017

sd/-

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# DETAILED TENDER NOTICE

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OFFICE OF THE EXECUTIVE ENGINEER, NASHIK MUNICIPAL SMART CITY



**NASHIK MUNICIPAL SMART CITY DEVELOPMENT CORPORATION LIMITED,  
NASHIK**

**DETAILED TENDER NOTICE**

Digitally Signed & unconditional online tenders in form B-1 (percentage of rate) are invited by the Executive Engineer, Nashik Municipal Smart City Development Corporation Limited, Nashik on behalf of Hon Commissioner, Nashik Municipal Smart City Development Corporation Limited from any of the following contractors for the work as mentioned in subsequent paragraph.

1. The Contractors of C.P.W.D. / M.E.S. / Indian Railway / M.E.S/ M.I.D.C. / M.J.P. / B.P.T. / M.C.G.M or Nashik Municipal Smart City Development Corporation Limited, Nashik registered or unregistered in corresponding appropriate class with reputed institutions. The certificates of satisfactory performance and registrations are to be uploaded online for registration on web site. Even though the registration of Govt departments is not required, contractors should possess requisite experience in mass plantation work along with minor civil work.
2. The contractor should upload scanned copy of undertaking duly notarized stating that his / their firm is not blacklisted in Govt. / Semi Govt. Institutions / NMSCDCL on Rs. 100/- Stamp Paper along with application for blank e-tender documents.
3. All the Contractors will be required to upload scanned copy of Banksolvency certificate to the extent 20% of the estimate cost at the time of application. Solvency certificate shall be issued by Nationalized Bank or Scheduled Banks with validity of one year shall be considered for tender process within its validity period.
4. The tenders will be received online on above mentioned GOM's E-Tendering portal and will be opened on same day (if possible) by Executive Engineer NMSCDCL on scheduled Tender Opening date.

**5. Details of Tender**

- |                 |   |
|-----------------|---|
| 1. Name of Work | Development of Nehru Garden under Nashik Municipal Smart City Development Corporation Limited |
|-----------------|---|

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2. Estimated Cost Rs. 12,075,755
3. E.M.D. 1 % of estimated cost
4. Security Deposit 5 % of estimate cost
5. Registration (Class) of Contractor Registered or unregistered but experienced.
6. Time Limit for completion of work 6(Six) Months from date of work order. (including Monsoon)

**Online e-Tender schedule**

Sr. No.	Details	Start Date	Hrs.	End Date	Hrs.
1	Publication of Tender				
2	Document Download (Sale)				
3	Bid Submission	02/06/2017		27/06/2017	15
4	Opening of Technical Envelope	28/06/2017	15		
5	Opening of Price Bid				
5	Prebid Conference is fixed on with C.E.O of NMSCDCL in the office of C.E.O at Nashik	08/06/2017	11		

7. Blank tender document and other details can be downloaded by above mentioned eTendering portal <http://mahatenders.gov.in> on payment of Rs.10090/- (Rs. Ten Thousand and Ninety Only) inclusive of MVAT (Non refundable) Tender Document Fee and EMD to be paid via Online E-Payment Gateway mode only.

**8. Conditions of Notice Inviting Tender**

The Contractor whose tender is accepted will be required to produce to satisfaction of the Concerned Authority valid and current license issued in his favor under the provision of the contract labor (Regulations and abolition) Act 1970 and in case of failure to do so the acceptance of the tender would be liable to be withdrawn and earnest money forfeited.

9. The competent Authority reserves right to accept or reject any or all tenders without assigning reason therefore.

10. The competent Authority reserves right to accept or reject any or all tenders without assigning reason therefore

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11. The tenders shall be received online on above mentioned E-Tendering Portal in Two envelopes system.
12. The conditional tender will be rejected.
13. The contractor should make their own arrangement of water supply for construction purpose and testing purpose.
14. Validity period of the offer of the tenderer will be 120 days from the receipt of the tender.
15. The lowest tenderer will have to submit the rate analysis of all major items if called for.
16. While quoting the offer, the contractor should mention above, below or at par clearly. If nothing is mentioned, the offer will be treated "Below" at the percentage quoted by the tenderer.
17. There is no Escalation clause for this work.
18. The agency should have satisfactorily completed (start to finish) as a main contractor at least one similar type of work amounting to 50 % of the cost of estimate cost during last five years. Attested copy of certificate to that effect from concerned department is required to be produced at the time of submission of application for tender.
19. Bids for joint venture will not be accepted.
20. Applicant should upload attested scanned photocopies of all documents & produce in Original on request by NMSCDCL at any stage from Tender opening.
21. The Tenderer / Bidder quoting more than 5% below the estimated cost shall invariably submit additional sealed envelope, containing the documents listed at Sr.No.(a) to (d) below, to the office of Executive Engineer, NMSCDCL, after last date of bid submission and prior to date of opening of tender.
  - (a) Original FDR /Demand Draft / Pay order of Additional Security Deposit (ASD), issued by any Nationalized Bank in the Payable at Nashik duly discharged in favour of 'NMSCDCL, Nashik '
  - (b) Rate analysis along with proper technical justification for quoting below the estimated cost.
  - (c) Confirmation letter from the respective Nationalized Bank about issuing FDR /Demand Draft / Pay Order for Additional S.D. amount towards the subjected work.
  - (d) Original undertaking for FDR / Demand Draft / Pay Order on company's letter head of the company, as per format. Format for undertaking for demand drafts/s on letter head, as per annexure -1 of this Tender.
  - (e) The additional sealed envelope mentioned above shall be submitted by tenderer / bidder, physically in the office of the Executive Engineer after last date of bid submission and prior to date of opening of tender. The tenderer / bidder quoting less than 5% below shall submit sealed

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envelope with NIL Report. (format attached of page No. 47 of Tender document) (f) The 1<sup>st</sup> Envelope (Technical bid) and 2<sup>nd</sup> Envelope (offer document) shall be opened on-line, as per prevailing procedure and thereafter, additional sealed envelope (ASD & documents) received physically shall be opened.

(g) In case of tenders/ bids with offer more than 5% below the estimated cost ; if the sealed envelope of ASD referred above is not submitted physically by the Tenderer/ Bidder of all documents mentioned above at point no.1 (a to d ) for additional sealed envelope are not found in envelope ; then such tender will be rejected outright. Such rejected tenders shall be termed as conditional / non-responsive tender. In such cases, any correspondence made by the Tenderer/ Bidder will not be entertained. Also, in such cases, Earnest Money Deposit (EMD) amount will be forfeited.(h) The Tenderer / Bidder must upload details of ASD in the format as mentioned in Tender notice, such as name of bank, DD (ASD) no., Tender No., Name of Vendor, due date of submission of tender etc. before the stipulated date & time of Bid submission ( Do not upload soft copies of scanned DDs' of ASD's in online submission ). (format attached of page No. 47 of Tender document)

(i) The Agency submitting the tender shall give undertaking in envelope No.1 on their letterhead that there is no work in hand or in progress, which is more than 10% below the estimated cost.(j) For the works quoted more than 5% below the estimated cost, the tenderer(s) shall also submit Pro forma 2A in Envelope No.1 and also to be uploaded along with the bid. If not submitted, the Bidder/ Tenderer will be disqualified from the bidding process. (Format attached of page No. 47of Tender document)

**22(a)** The Contractor quoting upto 10% below estimated cost, then agency shall submit demand draft of 1% of estimated cost put to tender towards performance security other than security deposit mentioned in the tender notice. The demand draft shall be submitted in separate sealed envelope. The demand draft should be in favor of 'NMSCDCL' payable at Nashik.

**23 (b)** If offer quoting more than 10% below estimated cost, then agency shall submit demand draft of amount which shall be worked out as  $(\text{Quoted offer in } \% - 10\%) + 1\%$  of estimated cost put to tender. For Example, if the is 14% below, the performance security to be paid will be  $(14\% - 10\%) + 1\%$  i.e. total 5% of estimated cost. The demand draft shall be submitted in separate sealed envelop. The demand draft should be in favour of 'NMSCDCL" payable at Nashik.

**24.** Earnest Money as mentioned above against the workto be paid via Online E-Payment Gateway mode only..E.M.D.Exemption is not allowed.

**25.** The amount of earnest money shall be forfeited in case after his / her / their tender is accepted the contractor fail / fails to complete the contract documents and pay the amount of Security Deposit noted against the work within specified time would be intimated in the letter of acceptance.

**26.** The Competent Authority may at its discretion defer the cancellation of the tender if the contractor pays interest on the amount of security deposit or any part thereof as remained unpaid within specified period at the rate of 20% per annum until the whole of such amount of security deposit has been paid.

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27. Decision of tenders will vest with the NMSCDCL who reserves the right of rejecting any or all the tenders without assigning any reasons for doing so.
28. The offer of the tenderer shall be binding for a period of 120 days from opening date of e-Tender.
9. A statement showing names of partners, Directors, etc. of the firm with complete address of each should be uploaded to the e-Tender and authorize person on behalf of firm should sign tender using digital signature certificate of his or her name to do so.
30. The tenders which are not accompanied by necessary information will be rejected without assigning any reasons for doing so.
31. The contractors/s may pay initial 50 % security Deposit on portal through e payment mode. and remaining half amount of Security Deposit is recovered as deduction from Contractors/s R.A. Bills.
32. The lowest tenderer shall be required to pay the Stamp duty for the execution of the contract agreement with the 'NMSCDCL' according to Govt. rules and scale in force
- 33.(a) The stamp duty will be Rs. 500/- on main agreement , if the agreement is up to Rs. 10 Lakh and after Rs. 10 Lakh stamp duty will be Rs. 100/- per Lakh onwards.
34. The rate of Stamp duty is subject to adjustment confirmation by the local stamp office and the contractor shall be bound to pay such modified rate as may be confirmed by the local stamp office.
35. The contractor/s whose tender is accepted shall be required to furnish a Surety Bond of an amount equivalent to the Security Deposit required as per stipulations of tender on regular stamp paper of Rs. 100/- (Rupees one hundred only) The contractors/s tendering for the work is/are required to take this fact into consideration while tendering
36. No alternations in the form of tender, schedule of quantities, units, specifications and in the shape of special stipulations will be permitted. Tender of the Contractor/s quoting the rates for units other than specified in the tender will not be considered.
37. The Competent Authority shall be entitled to reject complete tender and forfeit the earnest money paid by the Contractor/s if they fail to produce the required documents within stipulated period.
38. While submitting tenders the contractors/s shall take into consideration that they will have to pay income-tax at 2% ( or as per Income Tax Department Rules and Regulations for TDS as the case may be ) on gross amount and surcharge at prevailing rates to be paid and the same will be recovered through R.A. Bills.

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**39.** The tendered rates shall be inclusive of all taxes rates and ceses, Insurance of the work and shall be inclusive of service tax and tax livable in respect of work contract under the provision of the Maharashtra Sales Tax on Transfer of Property in goods involved in execution of Works Contract (TDS) Maharashtra tax laws (Act No XVII of 1999) (Levy Amendment & Validation Act 1999), Maharashtra Value Added Tax ( MVAT ) ,GST(If applicable)etc.The lowest tenderer shall have to make his own arrangement for electric supply for this work.

**40.**While preparing & submitting E-Tender the Contractor/s shall take into consideration that they will have to pay Works Contract Tax as per the Maharashtra Value Added Tax Act 2002, TDS shall be deducted at the rate of 2% on gross amount of bill payable to contractor if he is not registered under VAT, if he is registered under VAT, the TDS to be deducted at 2% from the bill. The rate shall be subject to Government's directions as those shall be issued from time to time.

**1.**While submitting E-Tender, the tenderer/s shall take into consideration that, they will have to pay Service Tax as per the rates decided by and as and when revised by Central Excise Department. The contractor will have to produce a registration certificate from Central Excise Department.The contractors offer shall be inclusive of Service Tax which is the liability and responsibility of the contractor to pay it to the Central Excise Department. An equal amount will be withheld from running payments till the contractor obtains Service Tax registration. The intension behind withholding the amount which to make the contractor to register with Central Excise Department and obtain registration certificate and make regular payment of taxes.As per Govt. C.R. of Maharashtra, Revenue & Forest Deptt's notification No. Gaukhani-10 / 1009/ PK-309 /Kh (3) Dated 11<sup>th</sup> Feb 2010, royalty charges of Rs. 400/- per brass, i.e. Rs. 141.34/- per cum, are included in the respective all items and of supply of natural minerals i.e. Rubble, Metal, Sand, Murum etc. in the tender rates. Contractor will have to produce documentary evidence to the Executive Engineer, as regards payment made by the Contractor to Revenue Department towards royalty charges. If such documentary evidence is not produced, the component of royalty charges as contemplated in the tender item will be deducted through running payments.

**42.**The acceptance of tender will be intimated telegraphically or otherwise by the authority competent to accept the tender to the Contractor/s, which shall be deemed to be an intimation of the tender given by the Authority Competent to accept the tender.

**43.** The lowest tenderer shall be equally responsible for executing / completing the work as per specifications and if any decision of consumer / any Hon. court is received regarding quality of work then the judicial decision will be binding on the Contractor for rectification.

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**44.** NMSCDCL reserves the right to verify financial transaction of Contractor in his Bank / Financial Institutions. Contractor should give authority to that effect along with his accounts number & Bank / Financial Institutions name & address. Any changes / modification may be communicated to NMSCDCL immediately.

**45.** As mentioned in the Notice Inviting Tender, at present the scope of work consists of similar type. However exact work may change as per the prevailing conditions at site which, will be informed in writing at the time of issuing letter of acceptance. The amount of Security Deposit shall remain same as per Notice Inviting Tender i.e. change in scope of work will not have any effect on the amount of S.D.

**A)** In case of reduction in work , not withstanding to the provisions of Clause 15 of the B-1 agreement, the bidder will not be entitled to the claim of what so ever nature on account of reduction in the scope of work .

**B)** In the case the demand is subsequently increased than Number of work as per the work order, then the bidder is bound to develop the additional work, at the same quoted rates & terms & conditions of this tender, subject to provision that the total of number of work in the work order and those ordered subsequently to be developed additionally shall not exceed the number of work mentioned in the Notice Inviting Tender. The decision of increase in the scope of work will be communicated in the writing to the contractor by Engineer-in-charge within three months from the date issue of work order. In such case, the bidder may be allowed time extension to complete the work so ordered without entitlement of any claim of what so ever nature on such account.

**46.** The Bidder will be eligible to submit the e-tender who meets the minimum qualification criteria only if his/their available bid capacity is more than total value of the work for which he has offered his bid. The available bid capacity will be calculated on the basis of formula given below.

$$\text{Assessed available bid capacity} = (A \times N \times 2 - B)$$

Where

A = Maximum value of building works executed in any one year during the last 5 years taking into account the works completed as well as works in progress, duly updated the value.

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

B = Updated value of existing commitments and ongoing works to be completed during the next 18 months (Period of completion of the works for which bids are invited)

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**Note:-** The statements showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representation in the forms. Statement and attachments submitted in proof of the qualification requirements; and/or record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation, history or financial failures etc.

**47. SECURITY DEPOSIT-**

- i. Total Security Deposit is 5% of estimated cost. The amount of initial security deposit will be 50% of total Security Deposit in Cash to be paid through the tender portal online and remaining 50% will be deducted from the bills as per Clause 21 of the printed conditions of contract.
  - ii. The amount towards Security Deposit deducted from R. A. Bills will not be allowed to be converted into Fix Deposit Receipt
  - iii. In addition the contractor will have to produce a Surety Bond on the stamp paper of appropriate denomination of equivalent to the Security Deposit with solvency certificate of the surety in whose favour you will produce Surety Bond.
48. The Income Tax @ 2% & cess etc or percentage in force from time to time or at the rate as intimated by competent authority of income tax department shall be deducted from the bill amount. Whether, a measured bill, an advance payment or a secured advance. Surcharge and Education cess over and above on income tax as per rate in force shall also be levied.

**49. DEFECT LIABILITY PERIOD :**

Defect liability period shall be three year. However security deposit @ 90 % of the amount of the Security Deposit shall be retained in the form of Fix Deposit receipt for the period of defect liability. The remaining security deposit shall be refunded after 6 months after completion of work in terms of clause 7 of the agreement or 3 months after the payment of final bill, whichever is later.

**50. WATCH AND WARD:**

Watch and Ward charges shall be borne by the contractor for initial period of one year after completion of the work and shall be payable by the NMSCDCL for the period beyond one year after completion watch & ward of the work and for such period for which the contractor shall be asked to provide watch and ward and shall be paid at the rates approved

By NMSCDCL. It is responsibility of contractor to obtain completion certificate NOC from local bodies (If required) this shall be considered as completion of work.

51. As per Maharashtra State Government resolution of Industry, Energy & Labour department No. BLA/2009/CR-108/Labour, 7-A dated 17 June 2010, the Worker welfare cess amounting to 1 % of gross bill amount shall be deducted from each bill

- .52. It will be the responsibility of contractor to pay the Local Body Tax (LBT) to the Urban Local body, failing which, the same and required amount will be deducted from the dues of contractor or RA Bills as per the demand of Urban Local body and the same amount will not be refundable to the contractor at any time.

53. The contractor shall make provision of Mobile on project site at their own expense.

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Contractor                      No. of Corrections                      Executive Engineer

**54. Solvency certificate**

- (a) All Contractors/Bidders shall submit Solvency certificate of amount of 20% of estimated cost put to tender in Technical bid.
- (b) Solvency certificate shall be issued by Nationalized Bank or Scheduled Banks with validity of one year shall be considered for tender process within its validity period.
- (c) Lowest bidder, whose tender is accepted, shall get extended Solvency certificate up to actual completion date / stipulated time period, whichever is later.
- (d) The tender of Contractor / Bidder shall not be opened, if solvency certificate is not submitted.

**55. Performance Security** (Only in case of tenders with premium % below Estimated cost put to tender)

- (a) If offer quoted is up to 10% below Estimated cost, then Agency shall submit Demand Draft of 1% of Estimated cost put to tender, towards performance security other than Security deposit mentioned in Tender notice. The copy of Demand Draft shall be scanned /uploaded with E-tender in Financial Bid.
- (b) If offer quoted more less than 10% below Estimated Cost, then Agency shall submit Demand Draft of amount which shall be worked out as “ (Quoted offer in % - 10% ) + 1% ) of Estimated cost put to tender. For example, if offer is 14% below. Than performance Security to be paid will be (14% - 10%) + 1% i.e. Total 5% of Estimated cost. The copy of Demand Draft shall be scanned/uploaded with E-tender in Financial Bid.
- (c) Regarding Demand draft towards performance security, following guidelines are issued.
  - (i) Demand Draft of performance security shall be issued in favour of Chief Accounts Officer, NMSCDCL.
  - (ii) Demand draft shall be issued by Nationalized Bank or Scheduled Bank, within Maharashtra State.
  - (iii) The maturity date of Demand Draft shall be at least 3 months from date of submission of E-tender.
  - (iv) The MICR and IFSC code shall be mentioned on Demand draft.

**56. Modifications in Tendering Process –**

- a) Physical Submission of Sealed Envelope, prior to tender opening –
  - i) The original Demand draft of performance security and original Solvency certificate shall be submitted in Sealed Envelope. along with Bank confirmation letter and forwarding letter on Agency’s letter head etc., physically, to the Executive Engineer, prior to tender opening and after last date of submission of E-tender.
  - ii) The Bidders, who have not quoted less amount (% below) than Estimated cost shall submit sealed envelope physically with original Solvency certificate and forwarding letter on Agency’s letter head, prior to tender opening and after last date of submission of E-tender.
- b) The Technical bid (online) shall be opened first, thereafter, sealed envelope (received physically) shall be opened and finally, financial bid (online)

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- c) If, documents in Technical bid and sealed envelope are found improper/incomplete, then, financial bid of such bidder/Agency shall not be opened and such tender shall be rejected outright.
- d) Demand Draft of Agencies other than first two lowest bidders shall be returned within 7 days from Tender opening.
- e) Wherever the offer quoted by lowest Agency (Contractor) is more less than 10% below Estimated Cost put to tender, Rate analysis justifying his quoted offer shall be submitted by lowest bidder and the officer calling tenders shall ensure that Agency is able to complete work within tendered amount.

57. All the NOC related to the project viz occupancy certificates, fire Noc, airport authority, environment clearance etc. whichever applicable accordingly to the local conditions shall be obtained from concerned authority by the contractor.

58. The contractor shall make his own arrangements of water by providing Bore well for construction work at his own expense. It will be responsibility of contractor to hand over this bore well in good condition after completion of work to NMSCDCL alongwith pumping accessories.

59. The Project is under financial assistance of development of smart cities . The Guidelines / Conditions Under development of smart cities are applicable for this project. The Details of scheme are mentioned in the Mission Document which is available in GOI's urban development ministry's website

60. Final Bill of Work will be cleared on closing of all outstanding paras of vigilance & Quality Control/ Authority & Technical Audit by Third Party, Quality Monitoring

#### **Instructions to the Tenderers for procedure of submission of tender**

Contents of tenders should be prepared & submitted on GOM's e-Tendering Portal mentioned above in following manner & must be upload below asked documents scanned copies.

- Online Envelope No.1. (T1)**
- 1) Scanned copy of Counter pay in slip or epayment slip given by Bank for EMD.
  - 2) Scanned copy of Valid Registration Certificate in appropriate class if any, PAN Card, VAT Registration Certificate .
  - 3) Scanned copy of Details of works in hand
  - 4) Scanned copy of Details of works completed.
  - 5) Scanned copy of Details of Technical Personnel.
  - 6) Scanned copy of List of machinery & plants.
  - 7) Scanned copy of Details of Litigation.
  - 8) Scanned copy of Registered power of attorney
  - 9) Scanned copy of Other documents as mentioned in Notice Inviting Tender

**Note:-** Pro-forma of statements Serial Nos. 3 to 7 are also provided along with main Tender Booklets (page No. 33 to 51). Tenderers are requested to fill me online forms of statements & encrypt the data using valid Digital Signature certificate issued by any of Government approved Certifying Authority, in envelope 1

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given.  
**Online** Main tender document mentioning the financial offer of the tenderer and minutes  
**Financial cover** of pre-bid meeting.  
**No.2. Tenders not received in above referred manner will to be rejected forthwith.**

**Procedure for Tender opening**

Tender will be opened online by competent authority on prescribed date given in Tender Schedule. Online E.M.D. scrutiny will be done first and uploaded documents by contractors will be opened against the tender requirements mentioned above. If contents are not as per requirements, online financial bid may not be opened.

**LIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID AND METHODOLOGY OF BID SUBMISSION**

The following documents should be submitted by the bidder along with sealed bid

1. Attested legible copy of valid registration certificate if any.
2. Attested legible copy of PAN CARD issued by Income Tax Department.
3. Statement showing all works previously executed in the last five years.  
(Proforma given at page 35) Statement-1
4. Statement showing all works in hand (proforma given at page 37) Statement- 2
5. Statement showing details of technical personnel available with bidder for the work for which the bid is submitted, (proforma given at page 39) Statement-3
6. Statement showing machinery available with the Bidder which will be used at the work  
(Performa given at page 41) Statement-4  
Where the machinery is not owned by the bidder he should attach a letter of the Owner to place the machinery at the disposal of the bidder.
7. Statement showing information on Litigation history in which bidder is involved.  
(Proforma given at page 43) Statement -5
8. Statement showing all works tendered for.-(Proforma given at page 45) Statement-6
9. Earnest Money receipt in the prescribed forms.
10. Attested legible copy of Licence having registered with Assistant Commissioner of labour as per Contract-Labour (Regulation & Abolition) Rules 1970. And the Maharashtra Contact-Labour (Regulation & Abolition) Rules 1970.

Contractor	No. of Corrections	Executive Engineer
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11. Attested legible copy of partnership deed/Memorandum and Articles of Associations as the case may be, if the bidder is partnership firm or a joint company.
12. Attested legible copy of M-VAT Act 2002.
13. Consents letter of Registered electrical contractor (Registered under the appropriate class in PWD, Electrical) 'C' class and above.
14. Consent letter of Registered Plumber.
15. Forwarding letter along with list of all documents, forms statements conditions etc.
  
16. Solvency certificate shall be issued by Nationalized Bank on scheduled bank with validity of one year shall be considered for tender process within its validity.

**Note :** Tenders shall have to submit the required information mentioned above at S.No.3,4,5,6,7 & 8 in prescribed format, otherwise the tender will not be opened and rejected without giving any reason.

Signature of Contractor  
Limited

sd/-  
Executive Engineer  
Nashik Municipal Smart City Development Corporation  
Nashik

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NASHIK MUNICIPAL SMART CITY  
NASHIK MUNICIPAL CORPORATION LIMITED



# SIX STATEMENTS

CONTRACTOR

EXECUTIVE ENGINEER  
NASHIK MUNICIPAL SMART CITY  
OFFICE OF THE EXECUTIVE ENGINEER



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NASHIK MUNICIPAL SMART CITY  
DEPT. OF URBAN CORP. & M. & E. DEPT.



1) STATEMENT SHOWING ALL WORKS PREVIOUSLY EXECUTED (in last 5 years)

Name of tenderer/s M/s.  
.....

Sr. No	Department / Organization awarding the work	Name of Work	Value of the total Work	Specified Period of Completion and Actual Period for completion.		Remarks (tenderer to indicate any recognition for completing works early fines, penalties for delays and reasons for delays)
				Specified	Actual	
1.	2.	3.	4.	5 (A)	5 (B)	6

( Signature of tenderer with seal )

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2) STATEMENT SHOWING ALL WORKS IN HAND ON THE DAY OF TENDERING

Name of tenderer/s M/s.  
.....

Sr. No .	Name of Work	Department / Organisation awarding the work	Value of the total Work Done	Value of Residual Work remaining to be completed.	Original Date of Completion	Remarks (tenderer to indicate any recognition for completing works yearly fines, penalties for delays and reasons for delays)
1.	2.	3.	4.	5	6	7

( Signature of tenderer with seal )

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3 ) STATEMENT SHOWING DETAILS OF TECHNICAL PERSONNEL AVAILABLE WITH THE  
TENDERER / CONTRACTOR FOR THE WORK TENDERED FOR

Name of tenderer / contractor/s M/s.

.....

Sr. No.	Name	Qualification	Details of Length of Service with the tenderer	Previous experience	Remarks
1.	2.	3.	4.	5.	6.

( Signature of tenderer with seal )

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4 ) STATEMENT SHOWING DETAILS OF EQUIPMENTS IN POSSESSION OF TENDERER

Name of tenderer/s M/s.  
.....

Sr. No.	Details of Equipment	No. of Equipments and Registration No.	Kind of make	Ownership of the Equipment	Capacity	Age of Machinery	Present Value and Condition of Machinery	Present Location	Remark
1.	2.	3.	4.	5.	6.	7	8	9	10

( Signature of tenderer with seal )

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5 ) STATEMENT SHOWING INFORMATION ON LITIGATION HISTORY IN WHICH TENDERER IS INVOLVED

Name of tenderer/s M/s.

.....

Other party(ies)	Employer	Cause of dispute	Amount involved	Remarks showing present status
1.	2.	3.	4.	5.

( Signature of tenderer with seal )

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6 ) STATEMENT SHOWING ALL WORKS TENDERED FOR

Name of tenderer/s M/s.  
.....

Sr. No.	Department/Organ- ization awarded the work	Name of Work	Amount involved		Position of Quotation	Probable Date of		Remark
			Remarks showing present status			Commence ment of Work	Completion of Work	
1.	2.	3.	4.	5.	6	7	8	9

( Signature of tenderer with seal )

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## Proformas to be submitted by the Tenderer before Tender opening

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## Proforma Annexure – I

I hereby submit FDR/Demand Draft /Pay order bearing no. \_\_\_\_\_ dated  
\_\_\_\_\_ drawn from the Bank \_\_\_\_\_ Branch \_\_\_\_\_ Along  
with the tender for the work of \_\_\_\_\_  
\_\_\_\_\_ towards Additional S.D.

Signature of Tenderer \_\_\_\_\_

Name of Tenderer M/s. \_\_\_\_\_

Address of Tenderer - \_\_\_\_\_  
\_\_\_\_\_

## Proforma 2A

Discription of Work	Place	Name and Address of Department	Value of Contract in Rs.	Time Period	Date of which decision is expected	Remarks
1	2	3	4	5	6	7

Signature of Tenderer \_\_\_\_\_

Name of Tenderer M/s. \_\_\_\_\_

Address of Tenderer - \_\_\_\_\_  
\_\_\_\_\_

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# UNDERTAKING & DECLARATION OF CONTRACTOR

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**Name of work: -Development of Nehru Garden, Nashik Municipal Smart City Development Corporation Limited for year 2017-18**

**Undertaking - (I)**

I / we have gone through the procedure **preparing online bid** and **submitting tender using e-Tendering system** and I / We am / are fully conversant with the details of procedure to be followed in this system.

I / we have submitted this tender after reading whole tender document

Signature

Date :- / / 2017

( )

Name of tenderer/s

**Name of work: - Development of Green Spaces at TavaliAmrutvanUdyan, Nashik Municipal Smart City Development Corporation Limited under Amrut Scheme for year 2017-18**

**Declaration of the Contractor - (II)**

I / we, hereby declare that I / we have made myself / ourselves thoroughly conversant with the local conditions regarding all materials and labour and site on which I / we have based my / our rates of this tender. The specifications and leads on this work have been carefully studied and understood before submitting this tender. I / we undertake to use only the best material out of the approved list of materials attached with this tender & as would be approved by Executive Engineer, during the execution of work & to abide by decisions.

Date :- / / 2017

(Signature of tenderer)

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# B-1 AGREEMENT FORM

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DEVELOPMENT CORPORATION LIMITED



B-1

NASHIK MUNICIPAL SMART CITY DEVELOPMENT  
CORPORATION LIMITED,  
NASHIK

=====  
**Percentage Rate tender Contract for Works**  
=====

**General Rules and Directions for Guidance of  
Contractors**

(1) All work proposed to be executed by contract shall be notified in a form of invitation to tender pasted on a board hung up in the office of the Executive Engineer and signed by the Executive Engineer.

This form will state the work to be carried out as well as the date for submitting and opening tenders, and time allowed for carrying out the work; also the amount of earnest money to be deposited with the tender, and amount of security deposit to be deposited by successful tenderer and the percentage if any to be deducted from bills. It will also state whether a refund of quarry fees, royalties, and ground rents will be granted. Copies of the specifications, designs and drawings and estimated rates, schedule rates, and any other documents required in connection with the work shall be signed by the Executive Engineer for the purpose of Identification, shall also be open for inspection by contractors at the office of the Executive Engineer during office hours.

Where the works are proposed to be executed according to the specification recommended by contractor and approved by competent authority on behalf of NMSCDCL such specifications with designs and drawing shall form part of the accepted tender.

(2) In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner it shall be signed on his behalf by a person holding power of

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attorney authorizing him to do so.

2 (A) (i) The contractor should pay along with the Tender Rs.120760/- as and by way of earnest money. The payment should be made by the form of e-payment.

(ii) In the event of his Tender being accepted, subject to provision of sub-clause (iii) below, the said amount of earnest money shall be appropriated towards the amount of security deposit payable by him under conditions of General Conditions of Contract.

(iii) If, after submitting, the tender, the contractor withdraws his offer, or modifies the same or if after the acceptance of his tender the contractor fails or neglects to furnish the balance of security deposit, without prejudice to any other rights and powers of the NMSCDCL shall be entitled to forfeit the full amount of the earnest money deposited by him.

iv) In the event of his Tender not being accepted, the amount of earnest money deposited by the contractor shall, unless it is prior thereto forfeited under the provisions of sub clause (iii) above, be refunded to him on his producing receipt thereof.

3) Receipt for payments made on account of any work, when executed by a firm, shall also be signed by all the partners except where the contractors are described in their tender as firm, in which case receipt shall be signed in the name of the firm by one of the partners or by some other person having authority to give effectual receipts for the firm.

4) Any person who submits a tender shall fill up the usual printed form stating at what percentage above or below the rates specified in Schedule B (memorandum showing items of work to be carried out) he is willing to undertake the work. Only one rate or such percentage on all the estimated rates shall be named Tender which purpose any alteration in the works specified in the said form of invitation to tender, or in the time allowed for

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carrying out the work or which contain any other conditions, will be liable to rejection. No printed form of tender shall include a tender for more than one work.

(5) Executive Engineer, N M C shall open tenders in the presence of contractors who have submitted tender or their authorized representatives who may be present at the time and he will enter the amounts of the several tender in a comparative statement in a suitable form in the event of a tender being accepted the contractor shall for the purpose of identification sign copies of the specifications and other documents mentioned in Rule 1. in the event of a tender being rejected, Hon Commissioner shall authorize the Chief Accountant Officer concerned to refund the amount of the earnest money deposited to the contractor making the tender, on his giving a receipt for the return of the money.

(6) The Officer competent to dispose of the tenders shall have the right rejecting all or any of tenders.

(7) No receipt of any payment alleged to have been made by a contractor in regard to any matter relating to his tender or the contract shall be valid and binding on NMSCDCL unless it is signed by the Executive Engineer.

(8) The memorandum of work to be tendered for and the schedule of material to be supplied, by the NMSCDCL and their rates shall be filled in and completed by the office of the Executive Engineer before the tender form is issued. If a form issued to an intending tenderer has not been so filled in and completed he shall request the said office to have his done before he completes and delivers his tender.

(9) All work shall be measured net by standard measure and according the rules and customs of the N M C without reference to any local custom.

(10) Under no circumstances shall any contractor be entitled to claim enhanced rates for any items in this contract.

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(11) Contractor has to produce along with his tender a solvency certificate from the Collector of the District within which he resides or a bankers certificate of his financial stability. If he fails to produce such a certificate his tender will not be considered.

(12) All corrections and additions or pasted slip should be initialed.

(13) The measurements of work will be taken according to the usual method in use in the N M C and no proposals to adopt alternative methods will be accepted. The Executive Engineer's decision as to what is the usual method in use in the Nashik Municipal Smart City Development Corporation Limited will be final.

(14) The tendering Contractor shall furnish a declaration along with the tender showing all works for which he has already entered into contract and the value of the work that remains to be executed in each case on the date of submitting the tender in the form of stat. No. I.

(15) Every tenderer shall submit along with tender information regarding the income tax circle, or ward of the district in which he is assessed to income tax the reference to the number of the assessment and the assessment year and a valid Income tax Certificate.

(16) In view of the difficult position regarding the availability of foreign exchange, no foreign exchange would be released by the Department for the purchase of Plant and machinery required for the execution of work contracted for.

(17) The contractor will have to construct shed for storing controlled and valuable materials issued to him under Schedule 'A' of Agreement, at work site, having double locking arrangement. The materials will then be taken for use in the presence of the Departmental person. No materials will be allowed to be removed from the site of works.

(18) The contractors shall also give a list of machinery in their possession and which they propose to use on the works in the form of stat. No. 4.

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(19) True copy of latest Income Tax Clearance Certificate should be attached to the tender.

(20) Contractors should produce evidence of their registration in appropriate (valid on the date of submission of tender) if available otherwise the tender will not be considered.

## **TENDER FOR WORKS**

I / We hereby tender for the execution for the Nashik Municipal Corporation (herein before and hereinafter refer to as Nashik Municipal Smart City Development Corporation Limited) of the work specified in the tender written memorandum within the time specified in such memorandum at ..... %. Percent below / above the estimated rates entered in schedule B (memorandum showing items of work to be carried out) and in accordance with all respects with the specifications designs drawing and instructions in writing referred to Rule I hereof and in Clause 12 of the annexed conditions of contract and agree that when materials for the work are provided by the N M C such materials and the rates to be paid for them shall be as provided in Schedule A hereto.

In figure as well  
as in words.

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## MEMORANDUM

- |     |   |  |   |
|-----|---|--|---|
| (a) | General Description   | <b>Development of Nehru Garden, Nashik Municipal Smart City Development Corporation Limited for year 2017-18</b> | a) If several sub works are included they should be detailed in a separate list.  |
| (b) | Estimated Cost  | Rs12,075,755   |   |
| (c) | Earnest money   | 1 % of estimated cost  | c) The amount of earnest money to be deposited shall be in accordance with the provisions of paras 206 and 207 of the P.W.D. manual.  |
| (d) | Security deposit  |  | d) This deposit shall be in accordance with 213 and 214 of the P.W.D. manual.   |
|     | (i) Cash (not less than the amount of earnest money)  | 2.5% of estimated cost   |   |
|     | (ii) To be deducted from current bills  | <u>2.5% of estimated cost</u>  |   |
| (e) | Percentage if any, to be deducted from bills so as to make up the total amount required as security deposit by the time half the work as measured by the cost is done at <b>05 % (Five percent)</b> . |  | e) This percentage where no security is taken will vary from 5% to 10% according to the requirement of the case where security deposit is taken. See note to Clause 1 of condition of contract. |
| (f) | Time allowed for the work from date of written order to commence vide <b>No.....</b><br><b>.....To. ....</b>  | <b>6 ( Six ) Months</b>  | Give schedule where necessary showing date by which the various items are to be completed.  |

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Should this tender be accepted I/we hereby agree to abide by and fulfill all the terms and provisions of the conditions of contract annexed hereto so far as applicable and in default thereof to forfeit and pay to Nashik Municipal Corporation the sums of money mentioned in the said conditions.

\* Amount to be specified in words and figures.

I / We agree that this offer shall remain open for acceptance for a minimum period of 90 days from the date fixed for opening the same 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. The amount of earnest money shall not bear interest and shall be liable to be forfeited by NMSCDC2 should I/We fail to (1) abide by the stipulation to keep the offer open for the period mentioned above or (2) sign and complete the contract documents as required by the Executive Engineer and furnish the security deposit as specified in item (d) of the memorandum contained in Para (i) above within the time limit laid down in clause (1) of the annexed general conditions 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.

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I / We have secured exemption from payment of earnest money after executing the necessary bond in favor of the NMSCDCL true copy of which enclosed herewith should any occasion of forfeiture of earnest money for this work arises due to failure on my part to (I) abide by the stipulation to keep the offer open for the period mentioned above (ii) or sign and complete the contract documents and furnish the security deposit as specified in item (d) of the memorandum contained in para (1) of the annexed general conditions of contract, the amount payable me/us at the option of the Executive engineer be recovered out of the amount deposited in lump sum for ensuring 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 moneys which are due or payable to me/us by NMSCDCL under any other contract or transaction of any nature whatsoever or otherwise.

Contractor .....

Address .....

Dated the .....day of .....

(Witness) .....

(Address) .....

(Occupation) .....

\* Signature of contractor before submission of tender.

\* Signature of witness to contractors signature

The above tender is hereby Executed and accepted by me for and on behalf of the Nashik Municipal Smart City Development Corporation Limited.

\* Signature of the officer by whom accepted

Executive Engineer  
Nashik Municipal Smart City Development Corporation Limited,  
Nashik

Dated .....day of .....

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## **Conditions of Contract**

**Clause No. 1 :-** The person/persons whose tender may be accepted (hereinafter called the contractor. which expression shall unless excluded by or repugnant to the contest include heirs, executors, administrators and assignees) shall (A) (within one day for a contract of Rs. 1,000 or less or two days for contract of more than 1,000 but less than Rs. 2,000 and so on upto a limit of ten days. Which may be extended by the Executive Engineer concerned upto fifteen days, if the Executive Engineer thinks it fit to do so, for a contract of over Rs. 10,000 of the receipt by him of the notification of the acceptance of his tender) deposit with the Executive Engineer ( if deposited for more than 12 months) a sum sufficient which will make up the full security deposit specified in the tender or (B) permit NMSCDCL. at the time of making any payment to him for work done under the contract to deduct such sum as will amount to \*10 % percent of all money so payable such deductions to be held by NMSCDCL. (by way of security deposit) provided always that in the event of the contractor depositing the lump sum by way of security deposit as contemplated at (A) above then and in such case, if the sum so deposited shall not amount to \* 2 % percent of the total estimated cost of the work, if shall be lawful for NMSCDCL. at the time of making any payment to the contractor for work done under the contract to make up a full amount of 2 % percent by deducting a sufficient sum from every such payment as last aforesaid until the full amount of the security deposit is made up. All compensation or other sum of money payable by the contractor to NMSCDCL. under the terms of his contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due or may become due by NMSCDCL. to the contractor on any account whatsoever and in the event of his security deposit being reduced by reasons of any such deduction or sale as aforesaid, the contractor shall within 10 days hereafter, make good in cash or NMSCDCL. securities endorsed as a 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.

If the amount of the security deposit to be in lump sum within the period specified at (A) above is not paid the tenderer / contractor already accepted shall be considered as canceled and legal step taken against the contractor for recovery of the amounts. The security deposit lodged by a contractor shall be refunded after the expire of three months from the date on which the final bill is paid, or after the expire of the date up to which the contractors has agreed to maintain the work in good order whichever is later. The security deposit sum so lodged by the contractor shall be returned to him on the expiry of the period of guarantee mentioned in Clause 20 after deducting there from the amount of expenses, if any due to NMSCDCL. under this agreement.

If the contractor desires in writing for refund of security deposit after completion of the work the same shall be refunded on expire of three months

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from the date of payment of final/bill after obtaining from him an indemnity bond as well as a bank guarantee of equal amount for the maintenance period 1 year from the date of completion of the work.

**Clause No. 2 :-**The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date on which the order to commence work is given to the contractor. The work shall through out the stipulated period of the contract be proceeded with, with all due diligence ( time being deemed to be of the essence of the contract on the part of the contractor) and the contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Executive Engineer(Whose decision in writing shall be final) may decide of the amount of the estimated cost of the whole work as shown by the tender for everyday that the work remains uncommenced, or unfinished after the proper dates. And further to ensure good progress during the

\* This will be the same percentage as that in tender at (e).

execution of the work, contractor shall be bound in all cases in which the time allowed for any work exceeds one month to complete

1/4 of the work in	1/4 of the time
1/2 do	1/2 do
3/4 do	3/4 do
Full work	18 months

and abide by the program of the detailed progress laid down by the Executive Engineer.

The following proportions will usually be found suitable :-  
In 1/4, 1/2, 3/4 in time

Reasonable progress earth work 1/6, 1/2, 3/4 of the Total value of the work to be done.  
Do Do of masonry work 1/10, 4/10, 8/10, Do  
Do

In the event of contractor failing to comply with this condition he shall be liable to pay as compensation an amount equal to one per cent or such smaller amount as the Executive Engineer(Whose decision in Writing shall be final) may decide of the said estimated cost of the whole work for every day that the due quantity of work remains incomplete. Provided always that the total amount of compensation to be paid under the provision of this clause shall not exceed 10 percent of the estimated cost of the work as shown in the tender.

Compensation for delay.

**Clause No. 3 :-**In any case in which under any clause or clauses of this contract the contractor shall have rendered himself liable to pay compensation for delay amounting to the whole of his security deposit (whether paid in one sum or deducted installments) or in the case of abandonment of the work owing to serious illness or Death of the contractor or any other cause the Executive Engineer on behalf of the NMSCDCL. shall have power to adopt any of the following courses, as he may deem best suited to the interest of NMSCDCL.

Action when whole of security deposits is

(a) to rescind the contract (of which rescission notice in writing to the contractor under the head of the Executive Engineer shall be conclusive evidence) and in that case the security Deposit of the contractor shall stand

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forfeited.

forfeited and be absolutely at the disposal of NMSCDCL.

(b) To carry out the work or any part of the work departmentally debiting the contractor with the cost of the work , expenditure incurred on Tools and plant and 10% supervision charges on additional supervisory staff including the cost of work charged establishments employed for getting the unexecuted part of the work . completed and crediting him with the value of the work done departmentally in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract . The certificate of the Executive Engineer as to the cost and other allied expenses so incurred and as to the value of the work so done departmentally shall be final and conclusive against the contractor.

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

In case the contract shall be rescinded under clause (a) above the contractor shall not be entitled to recover or be paid any sum for any work therefore actually performed by him under this contract unless and until the Executive Engineer shall have certified in writing the performance of the such work and the amount payable to him in respect thereof and he shall only be entitled to be paid the amount so certified. In the event of either of course referred to in clauses (b) or © being adopted and the cost of the work executed departmentally or through a new contractor and other allied expenses exceeding the value of the such work credited to the contractor, the amount of excess shall be deducted from any money due to

the contractors by NMSCDCL under the contract and otherwise howsoever or from his security deposit or the sale proceeds thereof provided however that the contractor shall have no claim against NMSCDCL even if the certified value of the work done departmentally or through a new contractor exceeds the certified cost of such work and have allied expenses; provided always that whichever of the three courses mentioned in clause (a), (b) or (c) is adopted by the Executive Engineer, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials, or entered into any engagements, made any advances on account of or with a view to the execution of the work or the performance of the contract.

**Clause No. 4 :-**If the progress of any particular portion of the work is unsatisfactory the Executive Engineer shall not with-standing that the general progress of work is in accordance with the conditions mentioned in clause 2 be entitled to take action under clause 3(b) after giving the

Action when the progress of any particular portion of the work is

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contractor 10 days notice in writing. The contractor will have no claim for compensation for any loss sustained by him owing to such action.

**Clause No. 5 :-**In any case in which any of the powers conferred upon the Executive Engineer by clauses 3(b) and 4 hereof shall have become exercisable and the same shall not have been exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall not with-standing be exercisable in the event of any future case of default by the contractor for which under any clause or clauses hereof he is declared liable to pay compensation amounting to the whole of his security deposit and the liability of the contractor for past and future compensation shall remain unaffected. In the event of Executive Engineer taking action under sub-clause (a) or (c) of clause 3, he may, if he so desires, take possession of all or any tools, plant, materials and stores, in or upon the works or the site thereof or belonging to the contractor, or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in account at the contract rates, or in case of contract rates not being applicable at current market rates or in the case of contract rates not being applicable at current market rates, to be certified by the Executive Engineer whose certificate thereof shall be final. In the alternative the Executive Engineer may after giving notice in writing to the contractor or his clerk of the work, foreman or other authorized agent require him to remove such tools, plant materials, or stores from premises within a time to be specified in such notice, and in the event of the contractor failing to comply with any such requisition, the Executive Engineer may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk at all respects, and the certificate of the Executive Engineer as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

**Clause No. 6:-**If the contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or on any other ground, he shall apply in writing to the Executive Engineer before the expiration of the period stipulated in the tender or before the expiration of 30 days from the date on which he was hindered as aforesaid or on which the clause for asking for extension occurred, whichever is earlier and the Executive Engineer, may if in his opinion there are reasonable grounds for granting an extension grant such extension as he thinks necessary or proper. The decision of the Executive Engineer in this matter shall be final.

**Clause No. 7:-**On the completion of the work the contractor shall be furnished with a certificate by the Executive Engineer (hereinafter called the Engineer in charge of such completion but no such certificate shall be given nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall have been executed all scaffolding, surplus materials and rubbish, and shall have cleaned off the dirt from all woodwork doors windows, walls, floor or other parts of any building in or upon which the work has been executed or of which he may have possession for the purpose of executing the work, nor until the works shall have been measured by the Engineer in charge or where the measurements have been taken by his subordinate until they have received the approval of the Engineer in charge, the said

unsatisfactory.

Contractor remains liable to pay compensation if action not taken under clause 3 and 4.

Power to take possession of or require removal of or sell contractors plant.

Extension of time

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\* Payment on inter-mediate certificates to be regarded as advances.

measurements being binding and conclusive against the contractor. If the contractor shall fail to comply with the requirements of his clauses as to the removal of scaffolding, surplus materials and rubbish and cleaning off dirt on or before the date fixed for the completion of the work the Engineer in charge may at the expense of the contractor, remove such scaffolding, surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the contractor shall forthwith pay the amount of all expenses so incurred but shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

**Clause No. 8 :-**No payment shall be made for any work estimated to cost less than rupees one thousand till after the whole of the work shall have been completed and a certificate of completion given. But in case of works estimated to cost more than one thousand, the contractor shall, on submitting a monthly bill thereof, be entitled to receive payment proportionate to the part of the work then approved and passed by the Engineer in charge whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the contractor. All such intermediate payments shall be regarded as payments by way of advance against the Final payments only and not as payments for work actually done and completed, and shall not preclude the Engineer in charge from requiring any bad, unsound, imperfect or unskillful work to be taken away and reconstructed and reverted nor shall any such payment be considered as an admission of the due performance of the contract or and part thereof in any respect of the accruing of any claim, nor shall it conclude determine, or affect in any other way the powers of the Engineer-in-charge as to the final settlement and adjustment of the accounts or otherwise, or in any other way vary or affect the contract. The final bill shall be submitted by contractor within one month of the date fixed for the completion of the work, otherwise, the Engineer in charge's certificate of the requirements and of total amount payable for the work shall be final and binding on all parties.

Payment of reduced rates on account of items of work not accepted as completed to be at its discretion of the Engineer in charge.

**Clause No. 9 :-**The rates for several items of works estimated to cost more than Rs. 1,000-agreed to within shall be valid only when the items concerned, is accepted having been completed fully in accordance with the sanctioned specifications. In case where the item of work not accepted as so completed the Engineer-in-Charge may make payment on account of such items at such reduced rates as he may consider reasonable in the preparation of final or on account bills.

**Clause No. 10 :-**A bill shall be submitted by the contractor each month on before the date fixed by the Engineer-in-charge for all work executed in the previous month and the Engineer-in-charge shall take or cause to be taken the requisite measurement for the purpose of having the same verified and the claim, so far as it is admissible shall be adjusted, if possible, within ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed aforesaid, the Engineer-in-Charge may depute a subordinate to measure up the said work in presence of the contractor or his duly authorized agent whose countersignature to the measurement list shall be sufficient warrant, and the Engineer-in-charge may prepare a bill from such list which

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Bills to be submitted monthly shall be binding on the contractor in all respects.

submitted monthly.

**Clause No. 11 :-**The contractor shall submit all bills on the printed form to be had on application at the office of the Engineer-in-charge. The charges to be made on the bills shall always be entered at the rates specified in the tender or in the case of any extra work ordered pursuant of these conditions and not mentioned or provided for in the tender, at the rates hereinafter provided for such work.

Bills to be on printed forms.

**Clause No. 12 :-**If the specification or estimate of the work provides for the use of any special description of materials to be specified from the stores of the NMSCDCL. or if it is required that the contractor shall use certain stores to be provided by the Engineer-in-charge (such material and stores and the prices to be charged therefor as hereinafter mentioned being so far as practicable for the convenience of the contractor but not so as in any way to control the meaning or effect of this contract specified in the schedule or memorandum hereto annexed) the contractor shall be supplied with such materials and stores as may be required from time to time to be used by him for the purposes of the contract only and the value of the full quantity of the materials and stores so supplied shall be set off or deducted from any sums then due, or thereafter to become due to the contractor under the contract or otherwise, or from the Security Deposit, or the proceeds of sale thereof. If the Security Deposit is Govt

Stores supplied by NMSCDCL.

Securities the same or sufficient portion thereafter shall in that case be sold for purpose. All materials supplied to the contractor shall remain the absolute property of NMSCDCL and shall on no account be removed from the site of the work and shall at all times be open to inspection by the Engineer-in-charge. Any such materials unused and in perfectly good condition at the time of completion or determination of the contract shall be returned to the NMSCDCL. stores, if the Engineer-in-charge so requires by a notice in writing given under his hand, but the contractor shall not be entitled to return any such materials except with consent of the Engineer-in-charge and he shall no claim for compensation on account of any such material supplied to him as aforesaid but remaining unused by him or for any wastage in or damage to any such materials.

\* works to be executed in accordance with specifications, drawings, order etc.

**Clause No. 13 :-**The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner and both as regards materials and every other respect in strict contractor accordance with specifications. The contractor shall also confirm exactly, fully and faithfully to the designs drawings and instructions in writing relating to the work signed by the Engineer-in-charge and lodged in his office and to which the contractor shall be entitled to have access for the purpose of inspection at such office or on the site of the work during office hours. The contractor will be entitled to receive three sets of contract drawings as well as one certified copy of the accepted tender along with the work order free of cost. Further copies of the contract drawings if required by him shall be supplied at the rate of Rs. 5000/- per set of contract and Rs. 500/- per drawing except where other wise specified .

\*Alterations in specifications and designs not to invalidate contracts.

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**Clause No. 14 :-**The Engineer-in-charge shall have power to make any alterations, in or additions to the original specifications drawings designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing signed by the Engineer-in-charge and such alteration shall not invalidate the contract and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same condition in all respects on which he agreed to do the main work & at the same rates are specified in the tender for the main work. And if the additional and altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out at the rates entered in the Schedule of rates of P.W.D. of State Government in operation where work is in progress or at the rates mutually agreed upon between the Engineer-in-charge and the contractor whichever are lower. If the additional or altered work for which no rate is entered in the Schedule of rates of the Division is ordered to be carried out before the rates are agreed upon then the contractor shall, within seven days of the date of receipt by him of the order to carry out the work Inform the Engineer-in-charge of the rate which it is his intention to charge for such class of work, and if the Engineer-in-charge dose not agree to this rate he shall by notice in writing be at liberty to cancel his order to carry out such class of work & arrange to carry it out in such manner as he may consider advisable, provided always that if the contractor shall commence work or incur any expenditure in regard there to before rates shall have been determined as lastly herein-before mentioned, then in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of a dispute, the decision of the Executive Engineer of the Circle will be final.

\*Rates for works not entered in estimate for schedule of rates of the districts.

Where, however the work is to be executed according to the designs, drawings and specifications recommended by the contractor and accepted by the competent authority and alterations above referred to shall be within the scope of such designs, drawings and specifications appended to the tender.

\* Extensions of time in Consequence of additions or alterations.

The time limit for the completion of the work shall be extended in the proportion that the increase in its cost occasioned by alterations or additions bears to the cost of the original contract work, and the certificate of the Engineer-in-charge as to such proportion shall be conclusive

**Clause No. 15 :-**1) If at any time after the execution of the contract documents, the Engineer-in-charge shall for any reasons what-so-ever (other than default on the part of contractor for which the NMSCDCL. is entitled to rescind the contract) desires that the whole or any part of the work specified in the tender should be suspended for any period or that the whole or part of the work should not be carried out at all he shall give to the contractor a notice in writing of such desire and upon the receipt of such notice the contractor shall forthwith suspend or stop the work wholly, or in part as required after having due regard to the appropriate stage at which the work should be stopped or

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suspended so as not to cause any damage or injury to the work already done or endanger the safety thereof provided that the decision of the Engineer-in-charge as to the stage at which the work or any part of it could be or could have been safely stopped or suspended shall be final and conclusive against the contractor. The contractor shall have no claim to any payment or compensation whatsoever by reason of or in pursuance of any notice as aforesaid on account of suspension stoppage or curtailment except to the extent specified hereinafter.

2) Where the total suspension of work ordered as aforesaid continued for a continuous period exceeding 120 days the contractor shall be at liberty to withdraw from the contractual obligations under the contract so far as it pertains to the unexecuted part of the work by giving a 10 days prior notice in writing to the Engineer-in-charge within 30 days of the expiry of the said period of 90 days of such intention and requiring the Engineer-in-charge to record the final measurements of the work already done and to pay the final bill. Upon giving such notice the contractor shall be deemed to have been discharged from his obligation to complete the remaining unexecuted work under this contract. On receipt of such receipt the Engineer-in-charge shall proceed to complete the measurement and make such payment as may be finally due to the contractor within a period of 90 days from the receipt of such notice in respect of the work already done by the contractor. Such payment shall not in any manner prejudice the right of the contractor to any further compensation under the remaining provision of this clause.

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

4) In the event of -

i) any total stoppage of work on notice from the Engineer-in-charge under sub-clause (1) in that behalf,

ii) withdrawal by the contractor from the contractual obligations to complete the remaining unexecuted work under sub-clause (2) on account of continued suspension of work for a period exceeding 90 days.

iii) Curtailment in the quantity of item or items originally tendered on the account of any alteration, omission or substitutions in the specifications, drawings, designs or instructions under clause 14 (1) where such curtailments exceeds 25 % in quantity and the value of quantity curtailed beyond 25 % of the rates of the item specified in the tender is more than Rs. 5000/-

\* No claim to compensation on account of loss due to delay in supply of material by NMSCDCL.

It shall be open to the contractor within **90 days** from the service of (i) the notice of stoppage of work or (ii) the notice of withdrawal from the contractual obligations under the contract on account of the continued suspension of work or (iii) notice under clause 14(1) resulting in such curtailment, to produce the Engineer-in-charge satisfactory documentary evidence that he had purchased or agreed to purchase material for use in the contracted work, before receipt by

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him of the notice of stoppage, suspension or curtailment and require the NMSCDCL. to take over on payment such material at the rates determined by the Engineer-in-charge, provided however such rates shall in no case exceed the rates at which the same was acquired by the contractor

The NMSCDCL. shall thereafter take over the material so offered provided the quantities offered are not in excess of requirements of the unexecuted work as specified in the accepted tender and are of quality and specifications approved by the Engineer-in-charge.

Clause No. 15-A :- The contractor shall not be entitled to claim any compensation from NMSCDCL. for the loss suffered by him on account of delay by NMSCDCL. in the supply of materials entered in schedule A where such delay is caused by -

(i) Difficulties relating to supply of Rly. wagons.

(ii) Force majeure

(iii) Act of God

(iv) Act of enemies of the republic of India or any other reasonable cause beyond the control of NMSCDCL.

In the case of such delay in the supply of materials by NMSCDCL. shall grant such extension of time for completion of the works as shall appear to the Executive Engineer to be reasonable in accordance with the circumstances of the case. The decision of the Executive Engineer as to the extension of the time shall be accepted as final as final by the contractor.

Clause No. 16:- Under no circumstances, whatever shall the contractor be entitled to any compensation from NMSCDCL. on any account unless the contractor shall have submitted a claim in writing to the Engineer-in-charge within one month of the cause of the such claim occurring.

ACCOMPANIMENT TO THE GOVERNMENT RESOLUTION,  
PUBLIC WORKS DEPARTMENT NO.CAT / 06 / 04 / 148, Dated  
16/05/2005

\* No claim to compensation and account of loss due to delay in supply of materials by NMSCDCL.

\* Time limit for unforeseen claims.

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**Clause No. 16 – I PRICE VARIATION CLAUSE- ( NOT APPLICABLE**

) :-If during the Operative period of the contract as defined in condition (i) below, there shall be any variation in the Consumer Price Index (New Series) for Industrial Workers for Nashikcentre as per the labour Gazette published by the Commissioner of Labour, Government of Maharashtra and / or in the wholesale Price Index for all commodities prepared by the Office of Economic Advisor, Ministry of Industry, Government of India, or in the price of Petrol / Oil and Lubricants, and major construction materials like bitumen, cement, steel various types of metal pipes etc. then subject to the other conditions mentioned below, price adjustment on account of

- 1) Labour component,
- 2) Material component,
- 3) Petrol, Oil and Lubricant component
- 4) Bitumen component
- 5) HYSD / TMT and mild steel component,
- 6) Cement component,
- 7) CI and DI pipes component.

calculated as per the formula hereinafter appearing, shall be made. Apart from this, no other adjustments shall be made to the contract price for any reasons whatsoever. Component percentage as given below are as of the total cost of work put to tender. Total of Labour Material and POL components shall be 100 and other components shall be as per actuals.

- |  |            |
|--|------------|
| 1) Labour Component – K1               | ( 24.51 %) |
| 2) Material Component – K2             | ( 72.69 %) |
| 3) POL Component – K3                  | ( 2.80 %)  |
| 4) Bitumen component -                 | Nil        |
| 5) HYSD / TMT & Mild Steel Component - | (-----)    |
| 6) Cement Component -                  | (-----)    |
| 7) C.I. & D.I. Pipe Component -        | Nil        |

Note :- If Cement, Steel, Bitumen, C.I. & D.I. Pipes are supplied Schedule 'A', then respective components shall not be considered. Also if particular component is not relevant same shall be deleted.

**1) Formula for the labour component :-**

$$V1 = \frac{K1}{100} \left( \frac{L1 - L0}{L0} \right) P - X$$

Where

V1 = Amount of Price Variation in Rupees to be allowed for Labour Component.

P = Cost of work done during the quarter under consideration minus the cost of cement, HYSD / TMT and Mild Steel, Bitumen, C.I. & D.I. Pipes calculated at the basic star rates as applicable for the tender consumed during the quarter under consideration

(These star rates shall be specified here). Basic star rate, cement Rs.270/-per bag i.e.5400/- per M.T., Mild steel Fe 250 per M.T., TMT steel Fe 500 Rs. 37,000/- per M.T.





K1 = Percentage of Labour Component as indicated above.

L0 = Basic Consumer Price Index for Nashikcentre shall be average consumer price index for the quarter preceding the month in which the last date prescribed for receipt of tender falls.

L1=Average consumer price index for SaNashikcentre for the quarter under consideration.

**2) Formula for Materials component :**

$$V2 = 0.85 \frac{M1-M0}{100} \times P \times X$$

Where

V2 = Amount of Price Variation in Rupees to be allowed for Materials Component.

P = Same as worked out for labour component.

K2 = Percentage of Material Component as indicated above.

M0 = Basic Wholesale Price Index shall be average wholesale price index for the quarter preceding the month in which to the last date prescribed for receipt of tender falls.

m1 = Average Wholesale Price Index during quarter under consideration.

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**3) Formula for Petrol, Oil and Lubricant component :**

$$V3 = 0.85 \frac{P1-P0}{100} \times K3 \times X$$

Where

V3 = Amount of Price Variation in Rupees to be allowed for POL component.

P = Same as worked out for labour component.

K3 = Percentage of Petrol, oil and lubricant component.

P0 = Average Price of HSD at Mumbai during the quarter preceding the month in which the last date prescribed for receipt of tender falls.

P1 = Average Price of H.S.D. at Mumbai during the quarter under consideration.

**4) Formula for Bitumen component :**

$$V4 = QB (B1-BO)$$

V4 = Amount of price variation in Rupees to be allowed for Bitumen component.

QB = Quantity of Bitumen (Grade) in metric tonnes used in the permanent works and approved enabling works during the quarter under consideration.

B1 = Current average ex-refinery price per metric tonne of Bitumen (Grade) under consideration including taxes (Octroi, excise, sales tax) during the quarter under consideration.

B0 = Basic rate of Bitumen in rupees per metric tonne as considered for working out value of P or average ex-refinery price in rupees per metric tonne including taxes (Octroi, excise, sales tax) of Bitumen for the grade of Bitumen under consideration prevailing quarter preceding the month in which the last date prescribed for receipt of tender, falls, whichever is higher.

**5) Formula for HYSD and Steel Component:**

$$V5 = So (SL1 - SLo) \times T$$

SLo

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Where, V 5 = Amount of price variation in Rupees to be allowed for HYSD / TMT / Mild Steel Component.

So = Basic rate of HYSD /TMT/ Mild Steel in Rupees per metric tonne as considered for working out value of P

SL1 = Average steel index as per RBI Bulletin during the quarter under consideration.

SLo = Average of steel index as per RBI Bulletin for the quarter preceding the month in which the last date prescribed for receipt of tender falls.

T = Tonnage of Steel used in the permanent woks for the quarter under consideration.

**6) Formula for Cement Component :**

$$V6 = Co \frac{(CL1 - CLo)}{CLo} \times T$$

CLo

Where, V6 = Amount of price escalation in Rupees to be allowed for cement component.

Co = Basic rate of cement in Rupees per metric tonne as considered for working out value of P.

CL1 = Average cement index published in the RBP Bulletin for the quarter under consideration.

CLo = Average of cement index published in the RBP Bulletin for the quarter preceding the month in which to the last date prescribed for receipt of tender falls.

Tonnage of Cement used in the permanent woks for the quarter under consideration.

**7) Formula for C.I. / D.I. Pipe Component :**

$$V7 = Qd \frac{(D1 - Do)}{Do} \times T$$

Where, V7 = Amount of price escalation in Rupees to be allowed for C.I. / D.I. Pipe components.

Do = Pig Iron Basic price in Rupees per tonne as considered for working out value of P.

D1 = Average Pig Iron price in Rupees per tonne during the quarter under consideration. (Published by I ISCO).

Qd = Tonnage of C.I. / D.I. Pipe used in the woks during the quarter under consideration.

The following conditions shall prevail :

ii) The Operative period of the contract shall mean the period commencing from the date of work order issued to the contractor

and ending on the date which the time allowed for the completion of works specified in the contract work expires, taking into

consideration the extension of time if any, for completion of the work granted by the Engineer under the relevant clause of the

conditions of contract in cases other than those where such extension is necessitated on account of default of the Contractor. The

decision of the Engineer as regards the Operative period of the contract shall be final and binding on the contractor. Where

any compensation for liquidated damages is levied on the contractor on account of delay in completion or inadequate progress

under the relevant contract provisions, the price adjustment amount for the balance of work from the date of levy of such compensation

shall be worked out by pegging the indices L1, M1, C1, P1, B1, SI1 and CI1 to the levels corresponding to the date from which

such compensation is levied.

(iii) This price variation clause shall be applicable to all contracts in B-1 / B-2 and C form but shall not apply to piece works.

The price variation shall be determine during each quarter as per formula given above in this clause.

(iv) The price variation under this clause shall not be payable for the extra items required to be executed during the completion of the

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work and also on the excess quantities of items payable under the provisions of clause 38/37 of the contract form B1/B2 respectively, hence the rates payable for extra items or the extra quantities under clause 38/37 are to be fixed as per the current DSR or as mutually agreed, to yearly revision till completion of such work. In other words, when the completion/ execution of extra items as well as extra quantities under clause 38/37 of the contract form B1/B2 extends beyond the operative date of the DSR, then rates payable for the same beyond the date shall be revised with reference to the current DSR prevalent at that time on year to year basis or revised in accordance with mutual agreement thereon, as provided for in the contract whichever is less.

(v) This clause is operative both ways, i.e. if the price variation as calculated above is on the plus side, payment on account of the price variation shall be allowed to the Contractor and if it is on the negative side, the Government shall be entitled to recover the same from the contractor and the amount shall be deductible from any amounts due and payable under the contract.

(vi) To the extent that full compensation for any rise or fall in costs to the contractor is not entirely covered by the provision of this or other clauses in the contract, the unit rate and prices included in the contract shall be deemed to include amount to cover the contingency of such other actual rise or fall in costs.

\* Action and compensation payable in case of bad work.

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**Clause No. 17 :-**If at any time before the security deposit is refunded to the contractor it shall appear to the Engineer-in-charge or his subordinate in charge of work that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of inferior quality, or that any materials or articles provided by him for the execution of the work are unsound, or of a quality inferior to that contracted for, or are otherwise not in accordance with the contract it shall be lawful for the Engineer-in-charge to intimate this fact in writing to the contractor and then not - withstanding the fact that the work, materials or articles complained of may have been inadvertently passed certified and paid for the contractor shall be bound forthwith to rectify or remove and reconstruct the work, so specified in whole or part, as the case may require or if so require shall remove the materials or articles so specified and provide other proper and suitable materials or articles at this own charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in the written intimation aforesaid the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate of every day not exceeding ten days during which the failure so continues & in the case of any such failure the Engineer-in-charge may rectify or remove and re-execute the work or remove and replace the materials or articles complained of as the case may be at the risk and expense in all respects of the contractor. Should the Engineer-in-charge consider that any such inferior work or materials as described above may be accepted or made use of it shall be within his discretion to accept the same at such reduced rates as he may fix therefore.

Maintenance and repairs of the road during guarantee period.

**Clause No. 17 A :-**The contractor shall maintain and keep in proper condition and repair at his cost the surface of the road for 2 (two) years from the date from which the final finishing coat is laid to the satisfaction of the Executive Engineer. The decision of the Executive Engineer as to the necessity of repairs to the surface of the road shall be final and binding on the contractor. If the contractor fails to maintain and keep in proper condition and repair the surface of the road during the stipulated period of 2 (two) years, the Executive Engineer shall be entitled to carry out the necessary repairs departmentally at the cost contractor. The decision of the Executive Engineer as to the amount of the Expenses incurred in the carrying out the repairs shall be final and binding on the contractor. The Executive Engineer shall be entitled to appropriate the whole or any part of the amount of the security deposit towards expenses, if any, incurred by him in repairing the surface.

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\* Works to open to inspection.

Contractor or responsible agent to be present.

**Clause No. 18 :-**All the works under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer-in-charge and his subordinates, and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of intention of the Engineer-in-charge or his subordinates to visit the works shall have been given to the contractor either himself be present to receive orders and instructions, or have responsible agent duly accredited in writing present for that purpose. Order given to the contractor's duly authorised agent shall be considered to have the same force and effect it they had been given to the contractor himself.

\* Notice to be given before work is covered up.

**Clause No. 19 :-**The contractor shall give not less than five days notice in writing to the Engineer-in-charge or his subordinates in charge of

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the work before covering up or otherwise placing beyond the reach of measurement any work in order that same may be measured, and correct dimensions thereof taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Engineer-in-charge or his subordinate-in-charge of the work and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at the contractors expense and in default hereof no payment or allowance shall be made for such work or for the materials with which the same was expected.

**Clause No. 20 :-**If during the period of **36 ( thirty six) months** from the date of completion as certified by the Engineer - in - charge pursuant of cause seven of the contract after commissioning the work whichever is earlier in the opinion of Executive Engineer the said work is defective in any manner whatsoever, the contractor shall forthwith on receipt of notice in that behalf from the Executive Engineer, duly

commence execution and completely carry out at his cost in every respect all the work that may be necessary for the rectifying and setting right the defects specified therein strictly in accordance with and in the manner prescribed and under the supervision of Executive Engineer. In the event of the contractor failing or neglecting to commence execution of the said rectification work within the period prescribed therefore in the said notice and/or to complete the same as aforesaid as required by the said notice, the Executive Engineer may get the same executed and carried out departmentally or by any other agency at the risk on account and at the cost of the contractor. The contractor shall forthwith on the demand pay to the NMSCDCL. the amount of such costs, charges and expenses sustained or incurred by NMSCDCL. of which the certificate of the Executive Engineer shall be final and binding on the contractor. Such costs, charges and expenses shall be deemed to be arrears of land revenues and in the event of the contractor failing or neglecting to pay same on demand as aforesaid, without prejudice to any other rights and remedies of the NMSCDCL., the same may be recovered from the contractor as arrears of land revenue. The NMSCDCL. shall also be entitled the to deduct the same from any amount which then may be payable or which may thereafter become payable by NMSCDCL. to the contractor either in respect of the said work or any other work whatsoever, or from the amount of the Security Deposit.

\* Contractor liable for damage done, and for imperfections for 12 (twelve) months after certificate.

**Clause No. 21 :-**The contractor shall supply at his own cost all materials (except such special materials, if any as may in accordance with contract be supplied from the NMSCDCL. stores), plant, tools, appliances, implements, ladders, cordage, tackle scaffolding and temporary works requisite or proper for the proper execution of the work, whether, in the original, altered or substituted form and whether included in the specifications or other documents forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-charge as to any matter as to which under these conditions he is entitled to be satisfied or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite no of

\* Contractor to supply plant, ladders scaffoldings

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\* And is liable for damages arising from non-provision of lights, fencing etc.

persons with the means and materials necessary for the purpose of the setting out works, and counting, weighing and assisting in the measurements or examinations at any time and from time to time of the work or the materials, failing which the same may be provided by the Engineer-in-charge at the expenses of the contractor and the expenses may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. The contractor shall provide all necessary fencing and lights required to protect the public from accident, and shall also be bound to bear the expenses of defense of every suit action or other legal proceedings that may be brought in by any person for injury sustained owing to neglect of the above precautions and to pay any damages and costs which may be awarded in any such suit, action or proceedings to any such person, or which may with the consent of the contractor be paid for compromising any claim by any such person.

**Clause No. 21 A** :-The contractor shall provide suitable scaffolds and working platforms gangways and stairways and shall comply with the following regulations in connection therewith:

- a) Suitable scaffolds shall be provided for workmen for all works that cannot be safely done from a ladder or by other means.
- b) A scaffold shall not be constructed, taken down or substantially altered except
  - i) under the supervision of a competent and responsible person and
  - ii) as far possible by competent workers possessing adequate experience in this kind of work.
- c) All scaffolds and appliances connected therewith and all ladders shall
  - i) be of sound materials.
  - ii) be of adequate strength having regard to the loads and strains to which they will be subjected, and
  - iii) be maintained in proper condition.
- d) Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
- e) Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.
- f) Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
- g) Scaffolds shall be periodically inspected by a competent person.
- h) Before allowing a scaffold to be used by his workmen the contractor shall whether the scaffold has been erected by his workmen or not, take steps to ensure that it complies fully the regulations herein specified.
- i) Working platforms, gangways and stairways shall:
  - i) be so constructed that no part thereof can sag unduly or unequally.
  - ii) be so constructed and maintained, having regard to the prevailing conditions so as to reduce as far as practicable risks of persons tripping or slipping and
  - iii) be kept free from any unnecessary obstruction.
- j) In case of working platform, gangways, working places and stairways at a height exceeding 10'0''.
  - i) every working platforms and every gangway shall be closely boarded unless other adequate measures are taken to ensure safety.

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- ii) every working platform and gangway shall have adequate width and
- iii) every working platform gangway working place and stairway shall be suitably fenced.
- k) Every opening in the floor of a building or in a working platform shall except for the door and to the extent required to allow the access of person or the transport or shifting of material, be provided with suitable means to prevent the fall of persons or materials.
- l) When persons are employed on a roof where there is a danger of falling from a height exceeding 10'0" suitable precautions shall be taken to prevent the fall of persons or material.
- m) Suitable precautions shall be taken to prevent persons being stuck by articles which might fall from scaffolds or other working places.
- n) Safe means of access shall be provided to all working platforms and other working places.
- o) The contractor/contractors will have to make payment to the laborers as per Minimum Wages Act.

**Clause No. 21B** :-The contractor shall comply with the following regulations as regards the Hoisting Appliances to be used by him :-

- a) Hoisting machines and tackle, including their attachments, anchorage's and supports shall;
  - i) be good mechanical construction sound material and adequate strength and free from patent defect, and
  - ii) be kept in good repairs and in good working orders.
- b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.
- c) Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in position at intervals to be prescribed by the NMSCDCL
- d) Every chain, ring, hook, shackles, swivel and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.
- e) Every crane driver or hoisting appliances operator shall be properly qualified.
- f) No person who is below the age of eighteen (18) years shall be in control of any hoisting machine, including any scaffold which or give signals to the operator.
- g) In the case of every hoisting machine and of every chain, ring hook shackle swivel and pulley block used in hoisting, lowering or as a means of suspension the safe working load shall be ascertained by adequate means.
- h) Every hoisting machine and all gear referred to in the preceding regulation shall be plainly marked with the Safe working load.

- \* Measure for prevention of fire.
  - i) In the case of hoisting machine having a variable safe working load each safe working load and the conditions under which it is applicable shall be clearly indicated.
  - j) No part of any hoisting machine or of any gear referred to in regulation 7 above shall be loaded beyond the safe working load except for the purpose of testing.
  - k) Motors, gearing, transmissions, electric wiring and other dangerous parts

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of hoisting appliance shall be provided with efficient safeguards.

- l) Hoisting appliances shall be provided with such means as will reduce to a minimum the risk of the accidental descent of the load.
- m) Adequate precautions shall be taken to reduce to a minimize the risk of any part of a suspended load becoming accidentally displaced.

\* Liability of contractor for any damage done in or outside work area.

**Clause No. 22** :-The contractor shall not set fire to any standing jungle trees brushwood or grass without a written permission from the Executive Engineer.

When such permit is given, and also in all cases when destroying cut or dug up trees brushwood grass etc. by fire, the contractor shall take necessary measure to prevent fire spreading to or otherwise damaging surrounding property.

The contractor shall make his own arrangements for drinking water for the labour employed by him.

\* Employment of female labour.

\* Work on Sundays.

**Clause No. 23** :-Compensation for all damage done intentionally or unintentionally by the contractor's labour whether in or beyond the limits of NMSCDCL property including any damage caused by the spreading of fire mentioned in clause 22 shall be estimated by the Engineer-in-charge or such other officer as he may appoint and the estimate of the Engineer-in-charge subject to the decision of the Executive Engineer on appeal shall be final and the contractor shall be bound to pay the amount of the assessed compensation on demand failing which the same will be recovered from the contractor as damage in the manner prescribed in clause 1 or deducted by the Engineer-in-charge from any sums that may be due or become due by NMSCDCL. to the contractor under this contract or otherwise.

\* Work not be sublet.

The contractor shall bear the expenses of defending any action or other legal proceeding that may be brought by any person for injury sustained by him owing to neglect of precautions to prevent the spread of fire and he shall pay any damages and cost that may be awarded by the Court in consequences.

\* Contract may be rescinded and security deposit forfeited for submitting it without approval or for bribing a public officer or if contractor becomes insolvent.

**Clause No. 24** :-The employment of female labors on works in the neighbor hood of soldiers barracks should be avoided as far as possible.

**Clause No. 25** :-No work shall be done on a Sunday without the sanction in writing of the Engineer-in-charge.

\* Sum payable

**Clause No. 26** :-The contract shall not be assigned or sublet without the written approval of the Engineer-in-charge. And if the contractor shall assign or sublet his contract or attempt to do so or become insolvent or commence any proceedings to get himself adjudicated and insolvent or make any composition with his creditors, or attempt to do so or if any bribe gratuity, gift, loan perquisite, reward of advantage pecuniary or otherwise shall either directly or indirectly be given promised or offered by the contractor or any of his servants or agents to any public officer or the person in the employ of NMSCDCL. in any way relating to his office or employment or if any such officer or person shall in any way directly or indirectly interested in the contract, the Engineer-in-charge may there upon by notice in writing rescind the contract, and the Security Deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of NMSCDCL. and the consequences shall ensure as if the contract had been

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by way of compensation to be considered as a reasonable compensation without reference to actual loss.

rescinded under clause 3 hereof and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

Clause No. 27 :- All sums payable by a contractor by way of compensation under any these conditions shall be considered as reasonable compensation to be applied to the use of NMSCDCL. without reference to the actual loss or damage sustained, and whether any damage has not been sustained.

\* Changes In the constitution of firm to be notified.

**Clause No. 28** :-In the case of tender by partners any change in the constitution of a firm shall be forthwith notified by the contractor to the Engineer-in-charge for his information.

**Clause No. 29** :-All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Executive Engineer of the Circle for the time being, who shall be entitled to direct at what point or point and in what manner they are to be commenced, and from time to time carried on.

\* Works to be under direction of Deputy Chief Engineer.

**Clause No. 30** :-Except where otherwise specified in the contract and subject to hours delegated to him by NMSCDCL. under the Code rules then in force the decision of the Executive Engineer of the circle for the time being shall be final, conclusive and binding on all parties to the contract upon all questions relating to the meaning of the specifications, designs, drawings and instructions here in before mentioned and as to the quality of workmanship or material used on the work or as to any other questions, claim, right matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specification, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution, or failure to execute the same, whether arising during the progress of the work, or after the completion or abandonment thereof. Clause 30 of B1 and B2 agreement form lays down that decision of the Executive Engineer in certain matter relating to the contract would be final. It should be born in mind that the clause is not an arbitration clause under which disputes between contractor and the Executive Engineer are referable to the arbitration of Dy. Chief Engineer. Any action taken by Executive Engineer under this clause can not therefore interpreted as an arbitration proceeding and does not enable contractor to claim relief under section B of arbitration act.

\* Decision of Executive Engineer to be final.

**Clause No. 31** :-The contractor shall obtain from the NMSCDCL. all stores and articles of Europeans or American manufacture which may be require or any part thereof or in making of any articles required therefor or in connection therewith unless he has obtained permission in writing from the Engineer-in-charge to obtain such stores and articles elsewhere. The value of such stores and articles as may be supplied to the contractor by the Engineer-in-charge will be debited to the contractor in his account at the rates shown in the schedule in form a attach to the contract, and if they are not entered in the

\* (Stores of European or American manufacture to be obtained from M.H. &A.D.A.

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said schedule, they shall be debited to him at cost price which for the purpose )  
of this contract shall include the cost of the carriage and all other expenses  
whatsoever, which shall have been include in obtaining the delivery of the  
same at the stores aforesaid.

**Clause No. 32** : -When the estimate on which a tender is made  
includes lump sums in respect of parts of the work the contractor shall be  
entitled to payment in respect of the items of work involved or the part of the  
work in question at the same rates as are payable under. This contract for each  
item, or if the part of the work in question is not in the opinion of the  
Engineer-in-charge capable of measurements, the Engineer-in-charge may at  
his discretion pay the lump sum amount entered in the estimate, and the  
certificate in writing of the Engineer-in-charge shall be final and conclusive  
against the contractor with regard to any sum or sums payable to him under  
the provisions of this clause.

\* Lump sums  
in estimates.

**Clause No. 33**:- In the case of any class of work for which there is no  
such specification as is mentioned in Rule 1 such work shall be carried out in  
accordance with the specification and in the event of their being no Divisional  
specification then in such case the work shall be carried out in all respects in  
accordance with the instructions and requirements of the Engineer-in-charge.

\* Action where  
no  
specification.

**Clause No. 34** :- (“The expression Works” or “Work” where used in these  
conditions shall, unless there be something on the subject or context  
repugnant to such construction, be construct to mean the work or works  
contracted to be executed under or in virtue of the contract) whether  
temporary or permanent and whether temporary or permanent and whether  
original, altered, substituted or additional.

\* Definition of  
work.

**Clause No. 35** :- The percentage referred to the tender shall be deducted  
from /added to the gross amount of the bill before deducting the value of any  
stock issued.

\* Contractor’s  
percentage  
whether  
applied to net  
or gross  
amounts of  
bill.

Compensation  
under the  
workmen’s  
Compensation  
Act.

**Clause No. 36**:- All quarry fees, royalties and ground rent for stacking  
materials, if any should be paid by the contractor, who will, however be  
entitled to refund of such of the charges as are permissible under the rules on  
obtaining a certificate from the Engineer-in-charge that the materials were  
required for use on NMSCDCL work.

**Clause No. 37** :-The contractor shall be responsible for and shall pay  
any compensation to his workmen payable under the workmen’s  
compensation act, 1923 (VLL of 1923), ( hereinafter called the said act) for  
injuries caused to the workmen. If such compensation is payable/ paid by  
NMSCDCL as principal under sub-section (1)of Section 12 of the said Act on  
behalf of the contractor, it shall be recoverable by NMSCDCL. from the

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contractor under Sub-section (2) of the said Section. Such compensation shall be recovered in the manner laid down in clause 1 above.

**Clause No. 37 A :-**The contractor shall be responsible for and shall pay the expenses of providing medical aid to any workman who may suffer a bodily injury as a result of an accident. If such expenses are incurred by NMSCDCL. the same shall be recoverable from the contractor forthwith and be deducted without prejudice to and other remedy of Government from any amount due or that may become due to the contractor.

**Clause No. 37 B :-**The contractor shall provide all necessary personal safety equipment and first aid apparatus available for the use of the persons employed on the site, shall maintain the same in condition suitable for immediate use at any time and shall comply with the following regulations in connection therewith.

\* Claim for quantities entered in the tender or estimate.

- (a) The workers shall be required to use the equipment so provided by the contractor and the contractor shall take adequate steps to ensure proper use of the equipment by those concerned.
- (b) When the work is carried on in proximity to any place where there is a risk of drowning all necessary equipment shall be provided and kept ready for use and all necessary steps be taken for the prompt rescue of any persons in danger.
- (c) Adequate provision shall be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.

**Clause No. 38 :-**

(1) Quantities shown in the tender in the tender are approximate and no claim shall be entertained for quantities of work executed being either more or less than those entered in the tender or estimate.

Quantities in respect of the several items shown in the tender are approximate and no revision in the tendered rate shall be permitted in respect of any of the item below plinth which may vary to any extent due to local conditions. For super structure items, same shall generally be limited to 25% excess over the tendered quantity and so long as the excess quantity beyond this limit at rate of the item specified in the tender, is not more than Rs. 5,000/-

(3)The contractor shall, if ordered in writing by the Engineer-in-charge so to do, carry out any quantities in excess of the limit mentioned in sub-clause (1)hereof on the same conditions as and in accordance with the specifications in the tender and at the rates (1) derived from the rates entered in the current schedule of rates and in the absence of such rates (2)at the rate prevailing in the market which may be increased or decreased as the case may be by the percentage which the total tendered amount bears to the estimated cost of the total work as put to tender based upon the schedule or rates applicable to the year in which the tender were invited for the purpose of operation of this clause, this cost shall be taken to be RsClaims arising out of reduction in the tenders quantity of any items beyond 25 % will be governed by the provision of Clause 15 only when the amount of such reduction beyond 25% per cent at the rate of the item specified in the tender is more than Rs. 5,000/-

\* Employment of famine labour etc.

**Clause No. 39 :-**The contractor shall employ any famine, convict or other labour of a particular kind class or if ordered in writing to do so by the Engineer-in-charge.

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**Clause No. 40 :-**No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or in the case of clearance works, on account of any delay in according sanction to estimates.

**Clause No. 41 :-**No compensation shall be allowed for any delay in the execution of the work on account of water standing in borrow pits compartments. The rates are inclusive for hard or cracked soil, excavation in mud, sub soil water or water standing in borrow pits and no claim for an extra rate shall be entertained, unless otherwise expressly specified.

**Clause No. 42 :-** The contractor shall not enter upon or commence any portion of work except with written authority and instructions of Engineer-in-charge or of subordinate-in-charge or the work. Failing such authority the contractor shall have no claim to ask. For measurements of or payment for work.

**Clause No. 43 :-**

(i) No Contractor shall employ any person who is under the age of 18 years.

(ii) No contractor shall employ donkeys or other animals with breaching of string or thin rope. The breaching must be at least three inches wide and should be tape (Newer).

(iii) No animal suffering from sore, lameness emaciation or which in immature shall be employed on the work.

(iv) The Engineer-in-charge or Agent is authorized to remove from the work any person or animal found working which does not satisfy these conditions and no responsibility shall be accepted by NMSCDCL. for any delay caused in the completion of the work by such removal.

(v) The contractor shall pay fair and reasonable wages to the workmen employed by him in the contract undertaken by in the event of any dispute arising between the contractor and his workmen on the grounds that the wages paid are not fair and reasonable the dispute shall be referred with details to the Executive Engineer who shall decide the same. The decision of the Executive Engineer shall be conclusive and binding on the contractor but such decision shall not in any way affect the condition in the contract regarding the payment to be made by NMSCDCL. at the sanctioned tender rates.

(vi) Contractor shall provide drinking water facilities to the workers. Similar amenities shall be provided to the workers engaged on large works in urban areas.

**Clause No. 44 :-**Payment to contractors shall be made by cheque drawn on any Bank within the division convenient to them, provided the amount exceeds Rs. 10/-. Amounts not exceeding Rs. 10/- will be paid in cash.

**Clause No. 45:-**Any contractor who does not accept these conditions shall not be allowed to tender for works.

**Clause No. 46: -**If the government declares a state of scarcity of famine to exist in any village situated within 10 miles of the work, the contractor shall employ upon such parts of the work, as are suitable for unskilled labour, any person certified to him by the Executive Engineer or by any person to whom the Executive Engineer may have delegated this in writing to be in

\* Claim for compensation for delay in the starting of work.

\* Claim for compensation for delay in the execution or work.

\* Entering upon or commencing any portion or work.

\* Minimum age of persons employed, the employment of donkeys and for other animals and the payment of fair wages.

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need or relief and shall be bound to pay to such persons wages not below the minimum which NMSCDCL. may have fixed in this behalf. Any disputes which may arise in this connection with the implementation of this clause shall be decided by the Executive Engineer whose decision shall be final and binding on the contractor.

**Clause No 47:-**The price quoted by the contractors shall not in any case exceed its control price<sup>0</sup> if any fixed by NMSCDCL. or reasonable price which it is permissible for him to charge private purchase for the same class and description the controlled price or the price permissible under Hoarding and Profiteering Prevention Ordinance, 1948 as amended from time to time. If the price quoted exceeds the controlled price or price permissible under Hoarding and Profiteering Prevention Ordinance, the contractor shall specifically mention this fact in his tender along with the reasons for quoting such priced. The purchaser at his discretion will in such case exercise the right of revising the price at any stage so as to conform with the controlled price permissible under Hoarding and Profiteering Prevention Ordinance. This discretion will be exercised without prejudice to any other action that may be taken against the contractor.

**Clause No. 48 :-**The rates to be quoted by the contractor must be inclusive of sales tax. No extra payment on this account will be made to the contractor.

**Clause No. 49 :-**In case of materials that may remain surplus with the contractor from those issued for the work contracted for, the date of ascertainment of the materials being surplus will be taken as the date of sale for the purpose of sales tax and the sales tax will be recovered on such sale.

**Clause No. 50 :-**The contractor shall employ at least 80 (eighty) percent of the total member of unskilled labour to be employed by him on the said work out of persons ordinarily residing in the district in which site of work is located provided however, that if the required number of unskilled labour from that district is not available the contractor shall in the first instance employ such number of persons as is available and thereafter may with the previous permission in writing of the Executive Engineer-in-charge of the said work, obtain the rest of his requirement of unskilled labour from outside the District.

\* Method of payment.

\* Acceptance of conditions. Compulsory tendering for work.

\* Employment of scarcity labour

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# **GENERAL CONDITIONS**

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## **GENERAL CONDITIONS**

1. All items occurring in the works and as found necessary in actual execution shall be carried out in work-man-like manner as per specifications already given for each item and also as per specifications given in the standard Specification Book. (Commonly known as the “Red Book”) of Government of Maharashtra latest Edition and as per relevant latest I.S. Specifications and as per the orders of the Engineer-in-Charge from time to time. Specifications attached herewith shall however have the precedence and the contractors should please read them carefully.

2. It must be distinctly understood that the conditions of contract and specifications are intended to be rigidly enforced and no relaxation on the ground of custom prevailing is to be allowed. No extra item of work shall be carried out by the contractor unless ordered in writing by the Executive Engineer-in-Charge. It shall be the contractor’s responsibility to get the rate of such extra item fixed by the Executive Engineer-in-Charge within seven days from the receipt of such orders. Extra charges for the claim in respect of extra work will not be entertained unless the work to which it relates is clear, without the spirit and meaning of the specifications.

In case of the failure of the contractor to get the rate fixed as above within the specified period as above the rate that may be fixed by the Executive Engineer-In-Charge shall be binding on the contractor.

3. The contractor shall engage an authorised and experienced Engineering Supervisor for the work capable for managing and guiding the work. He must possess sufficient working knowledge of R.C.C. work. He shall take such orders as may be given to him by the Engineer-In-Charge from time to time and shall be responsible for carrying them out faithfully.

4. The contractor shall also have an office near the works where the notices from the Executive Engineer may be served and shall be open between the hours of sunrise and sunset on all working days. A clerk or some authorised person shall always be present at such office upon whom such notice may be served and serving of any notices left with such clerk or the representative or in such office shall be deemed to have been validly served upon the contractor for all purposes.

5. An Order Book shall be maintained on the work and the contractor or his authorised Representative shall sign the orders by the Engineer-In-Charge and shall carry them out promptly.

In case the contractor continues to indulge in doing work contrary to the instructions given to him as incorporated in the Book or given in writing by separate communication he shall be doing so, entirely at his risk and cost and the engineer in charge or his authorised representative shall have right to stop such work and to get the needful done at the contractor’s risk and cost. The contractor shall, be held responsible for the delay in execution of work and shall bear all other consequences arising out of non compliance of the orders given in time.

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6. i) The contractor shall have to clear the entire site before the work, is commenced without any extra cost. The clearance of site includes removal of grass, trees, vegetation's, boulders and extra earth at site in order to level down the site as required. The extra earth which may thus be obtained would be deposited or disposed off as directed by the Engineer-In-Charge without claiming anything extra. The contractor shall make his

7. Own arrangement for preventing flood water or tide water entering the area of his work, and for keeping it dry at his own costs. He should have sufficient No. of pumps for dewatering etc. and in no case should the progress of work be allowed to be-hindered on account of flood and tide.

The contractor shall also be responsible to keep the site and approaches clear and maintain them in perfect order during the course of construction and upto completion of the work. The contractor shall give reasonable facilities as directed by the Executive Engineer-In-Charge to the contractors or agencies of the Nashik Municipal Smart City Development Corporation Limited for executing ancillary works such as roads, sewers water, mains, domestic and street lights etc. In case any of the material, tools and plant etc. of the contractor are lying on the road and are obstructing progress of the ancillary works and if the same are not removed within the time specified by the Executive Engineer, the same shall be got removed at the risk and cost of the contractor and no protest or claims shall be entertained on that account.

7. i) As the supplies of cement required for the work are not received in regular quantities as per progressive requirements for the work, the contractor shall provide adequate storing space for receiving cement as and when same are issued to him by the Engineer-In-Charge and he shall for the purposes provide a store which shall have storage capacity of not less than 20% of the required or storing total quantity to be issued to him as per Schedule 'A'. This space should be in addition to space empty cement bags. In case of failure to provide the requisite store as stated above the same shall be provided at the contractor's risk and cost as may be directed by the Engineer-In-Charge. The cement shall be stored as per instructions issued in the Booklet of the Associated Cement Company, and the Engineer-In-Charge and shall be convenient and easily countable stocks at all time and cement shed shall have strong doors and double locking arrangements of a quality lock as approved by the Engineer-In-Charge. The key of one lock should be with the Engineer-In-Charge of works and the keys of other with the contractor.

ii) The contractor in addition to the required store and other structures required for the work shall provide and construct a suitable temporary office building as directed by the Engineer-In-Charge. The office shall be constructed with use of asphalt corrugated sheet. This office building should be constructed as per design and drawing supplied by the Board. The temp. Office building shall be the property of contractor and can be taken away by him after construction of the scheme is over for which nothing shall be paid extra.

iii) Office Building shall also be provided with furniture (consisting of 3 Nos. of tables, 8 Nos. of chairs, 1 No. bench, 2 Nos. of T.W. cupboards of sizes not less than (4'-0"x3'-0"x1'7") 1.22m X 0.91m X 0.46 with necessary locking arrangements for the use of supervisory staff and consultant staff of the Nashik Municipal Smart City Development Corporation Limited, as directed by the Engineer-In-Charge. The constructions of the temporary office building shall be carried out as soon as possible. The furniture provided for the office use shall be the property of the contractor & the same shall be allowed to be removed after completion of main work. The contractor shall provide for the office building necessary drainage and water provisions. The Municipal taxes and all other taxes payable on such office building shall be paid by the contractor during the period of execution of work.

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8. The contractor shall provide all labour pegs strings, and other materials as required for lining and Setting out the work without any payment. Also he shall provide all instruments and attendance required by the Executive Engineer and his representative for checking of the works at all stages of constructions as and when so directed by the Executive Engineer.

9. The percentage rates tendered by the contractor shall be inclusive of all taxes, duties, town--duty etc. to be paid by the contractor for the material required for the work and no extra payment shall be made to the contractor on any account thereof.

10. The contractor at his own cost and the charges for water shall be paid by the contractor direct to the concerned Municipal authorities or any other authority supplying water at the rates specified by them. However the Board shall help the contractor to get such water connections by way of recommendation, at the rate specified by the said authority. The contractor also comply with all the requirements of the Health Department of the Municipality or any other authority in charge of management of the locality particularly in regards to anti-malaria or any other such measures.

11. The contractor shall maintain the roads used by him for transport and also shall provide necessary approach roads as required and keep the same duly maintained at his cost in order to have easy transport and also satisfactory inspection by the Officers of the NashikMunicipal Corporation. If it is necessary to have such roads and passage in private property, the contractor shall pay the charges to such private parties.

The main contractor shall be bound to give the right of access of such roads and passages to other contractors for subsidiary work and to other main contractor and also to others, as directed by the Engineer-In-Charge without any charges. The contractor shall take ample precautions regarding safety of the existing structures and in case of any damage caused by him or his agents shall make good the loss at his own cost. The contractor shall on completion of work restore the roads to their original conditions.

In case he fails to restore the roads to the satisfaction of the Engineer-In-Charge the same shall be done at the risk and cost of the contractor. In case the contractor fails to maintain the road used by them the same shall be done at the risk and cost of the contractor.

12. The contractor is to set out the level for all works and shall be responsible for the accuracy of the same. He shall provide necessary sight rails etc. as directed by the Executive Engineer. Any defective or inaccurate setting out or deviation from sanctioned plan shall be rectified at his risk and cost. The contractor shall provided good leveling instruments and staff for use on works.

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13. The contractor shall supply all the materials, articles, tools plant, labour etc., required for carrying out slump test of concrete & the test shall be done before commencement of concreting and if required during progress of work. The quantity of water as specified as per the slump test should be adhered to throughout the concreting period. The contractor shall prepare C.C. Cubes where R.C.C works are under progress strictly as per I.S.S. and send the same to two different laboratories after curing as per I.S.S. Testing charges and all other incidental charges shall be borne by the contractor. This is required in order to see that the cement concrete is up to the required standard and strength. Any work which is found to be of inferior quality shall be removed at the risk and cost of the contractor and shall have to be redone or reimbursed by him at his own cost, to the entire satisfaction of the Engineer-In-Charge.

14. The contractor shall make necessary arrangements to obtain water connection from the Municipal Corporation or other authorities concerned for the execution of the work at his own cost and pay deposit and charges in accord with the rules of the Municipal Corporation or other authorities in force. The Nashik Municipal Smart City Development Corporation Limited will help the contractor to obtain the necessary water connection by way of recommendation only. It is however obligatory on the part of the contractor to allow the contractor carrying out subsidiary works viz. water supply, drainage, electric installation and road works etc, in case such demand is put by the contractor carrying out ancillary works to draw required quantity of water without any obstruction whatsoever. The contractor shall however, recover cost of water charges at 1% of the value of the work or respective contractor for water supply, drainage, roads filling etc. and 0.1% of the value of the work in case of electric contractor for water used by the subsidiary contractors direct. In case, of any dispute the decision of the Executive Engineer shall be final and binding on all the contractors. The contractor will not be allowed to disconnect or remove the pipe laid by him for taking water required for execution of the work, until the tenements are occupied and permission for removal of the pipe and to disconnect the connection taken is obtained in writing from the Engineer-In-Charge of work.

15. The present layout and arrangement of groups of buildings may have to be altered to suit local conditions. The contractor shall be bound to agree to the revised layout and groupings as per finally decided and communicated to him by the Engineer-In-Charge. The contractor also shall have no claim in case the site of these building is changed from the one shown in the sanctioned plans to the nearby site in the same area. The condition shall also apply even otherwise irrespective of the facts whether the numbers of tenements are increased or decreased.

16. The contractor shall have to pay all the deposits and payments to all the concerned authorities for execution of all the items of the work under the contract/s.

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17. Notwithstanding what is stated in clause 5 of the printed conditions of contract, the Executive Engineer, shall have the power to take possession of all the materials, tools and plants etc. in possession of the contractor at the time and on the site of work, irrespective of the fact whether the whole or a Part of the aforesaid materials tools, and plant etc. is intended to be used on the work or not. The Executive Engineer shall further have the power to auction the same in case the contractor fails to make good his in abilities after due notice is given to him. Any amount that may have to be spent in safeguarding the materials till the final accounts are settled shall also be recovered from the contractor's dues. Such dues shall be payable on the date of intimation given by the Executive Engineer to the contractor.

18. Before purchasing any paints, linseed oil, fittings etc., the contractor shall get the brand and sample approved and in case they fail to do so, work with such materials will be liable to be rejected for which the responsibility shall be solely of the contractor.

19. In case of glasses wherever required, the same shall be clear or frosted or ground as directed for which nothing extra shall be paid.

20. For water supply arrangements the contractor shall make the necessary arrangements to get the 'P' form the Municipality through the licensed plumber authorized for the work. The department will help if necessary by way of recommendation only. It shall be the sole responsibility of the contractor to get the 'P' form in time.

21. In case of failure on the part of the contractor to comply with any of the Instructions given in the notes under the tender the Executive Engineer, shall be at liberty to get the work done at the risk and cost of the contractor and deduct necessary amount from his bills or other dues.

22. The rates quoted in the tender apply to all the details described for items in the Schedule 'B' and in the specifications, notes or in any other part of tender. The item shall be treated as complete item payable at tender rate's nothings extra being payable separately on any account.

23. It shall be the sole responsibility of the contractor to abide by the rules and regulations of minimum wages act in respect of maintaining registers etc. about attendance, wages, holidays etc., of laborers employed by him. The Department in no way shall be responsible for any deviation and negligence of the contractor in complying with the above requirements.

24. Whenever any claim against the contractor for the payment of sum of money arises out of or under the contract, Nashik Municipal Smart City Development Corporation Limited will be entitled to recover such sum or sum appropriating in part of whole, the security deposit of the contractor and to sell any Government Promissory Notes etc., farming whole or part of security. In the event of the security deposit being Insufficient or if no security has been taken from the contractor then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due from the contractor under this or any other contract with Nashik Municipal Smart City Development Corporation Limited, should this amount be not sufficient to cover this full amount recoverable, the contractor shall pay to the Nashik Municipal Smart City Development Corporation Limited on demand the balance remaining due. In case a particular person was partner in firm against whom the NMSCDCL has a claim and if the same partner joins another firm the amount due from the partner according to his share of interest in the former firm shall be recovered from his share of interest in the subsequent firm.

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25. Nashik Municipal Corporation shall have the right to cause any audit and technical examination of the works and final bills of the contractor, including all.

26. The contractor shall have to pay all dues or recoveries that may be pointed out by the audit during the post audit. of the final bills, subsequently to the refund of the full amount or security deposit for this, the contractor shall if so desires sign an indemnity bond on stamped paper at time of refund of full amount of security deposit.

27. The contractor shall give full access and cooperation to the vigilance and Technical Examiner Nashik Municipal Smart City Development Corporation Limited for inspection of works checking of cement account etc. the quality of works as examined and reported by the Technical Examiner shall be binding on the contractor and reduced rate will be paid for any inferior work if not done to the satisfaction of the Technical Examiner.

28. In view of the difficult position regarding availability of foreign exchange, no foreign exchange will be released by the department for the purpose of the plant and machinery required for the execution of the work.

29. The contractor shall sign each page of Schedule 'A' and Schedule 'B' before submitting this tender.

30. The contractor shall make himself aware of the departmental procedure right from accepting the tender to payment of final bills including interim payment.

31. Not with standing whatever stated in clause 11 of by from, the contractor shall have to supply in adequate Nos. free of cost, printed R.A. Bill forms in the prescribed form, with the complete description of all items of the work as per tender for preparation of running account bills and final bills. In case they are not supplied the contractor shall be charged at the rate of Rs. 30 per sheet subject to minimum of Rs. 100 per bill and Rs. 200/- in respect of final bill.

32. The NMSCDCL shall give reasonable facilities to the contractor by way of permits to enable him to obtain controlled materials other than specified in Schedule 'A' The contractor shall make his own arrangements to get such materials. The contractor shall however not be entitled to any compensation or extension of time limit on account of delay in obtaining the necessary supply. The Contractor shall procure the materials in pursuance of the permit issued and he will not be entitled to make any claim on any account either due to increased cost or taxes and duties of any kind as the NMSCDCL shall not be concerned on account of the subsequent increase or decrease in rate of materials.

33. The materials so obtained and those supplied as per Schedule 'A' shall be stacked at site of work as directed and used only on the work in question and any material remaining surplus shall not be disposed off or removed by the contractor without obtaining written permission of the Engineer-In-Charge. The NMSCDCL will have an option of taking over the materials are in the same conditions as they were at the time of issue and provided the same are serviceable. In such case the contractor shall without any extra cost convey and deliver the materials at the Divisional store and stack them properly. The contractor shall maintain regular account of the receipts and also the use of materials on the site of work to the satisfaction of the Engineer-In-Charge and supply monthly statement of such accounts to the officer in charge. The cement account register shall be signed daily and particular date No of all bags and empty bags available in the go down on any particular date.

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34. The contractor shall submit monthly account of the receipt and use of all materials supplied as per Schedule 'A' and also of all the controlled materials for which permits are issued to him as per the actual use and the contractor shall submit the final details of accounts stated above at the time of final bill when the work is completed as per actual construction carried out. The account shall be at the entire satisfaction of the Executive Engineer and in case any discrepancy of materials is found a penalty in addition and equivalent to the cost of materials as per corresponding rates in Schedule 'A' and as per rates at which the controlled materials are taken direct (these shall be only for such materials for which permits are issued) shall be recovered from him.

(a) The contractor shall see that only the required quantities of materials provided for in Schedule 'A' are got issued. Any such materials remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned to the Engineer-In-Charge at place wherever directed by him by notice in writing. Credit for such materials will be given at the prevailing market rate on the issue rate of the department not exceeding the amount charged to him. The Contractor will not be entitled to cartage and incidental charges for returning the surplus from and to the stores where from they were issued.

35. For all works in this contract, where cement is to be used the same shall be used in bags taking each bag as, 1.18 cu.ft. in volume, and such kind of bag shall be weighing 50 kg. net.

36. Whenever bricks are to be purchased and procured by contractor for use in the work the same shall be of approved patent and kiln burnt and in standard available sizes, They shall be of uniform size 4" X 4 ½ "width and conform to I.S.I. and standard specification.

37. "Quantities showing in Schedule 'A' or 'B' are approximate and no claim shall be entertained for any variation in quantity to any extent for items below plinth due to local conditions, which include sanitary and water supply fittings including size of chambers etc. below plinth level.

38. The samples each class of materials and workmanship shall be got approved prior to actual use and satisfactory tests for the works and materials shall be given by the contractor at his own cost, as directed by Executive Engineer. If the Executive Engineer, considers that the materials should be got tested from Government Laboratories, the contractor shall have to bear all charges for the same.

39. It is proposed to use C.I and A.C pipes as soil pipes, waste water pipes, rain water pipes and anti shipnage pipes on the work. The use of C.I pipes and specials will be restricted to work below first floor level (i.e. top of the slab covering ground floor) and rest of the work on upper floors shall be in A.C. Pipes and specials. The contractor shall have to use these with all the special as required and where directed and make connections as required.

The quantities given or the pipe length and specials in Schedule 'A' and 'B' are approximate. He shall be paid for actual running measurements including fitting etc. no claim shall be entertained for any variations.

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40. All timber shall be best quality, well seasoned and free from knots, bends, etc. all planks and scantlings shall be approved by the Engineer-In-Charge and the rejected materials shall be removed from the site. All operations of cutting, planning and joinery shall be done at the site as directed, by the Engineer-In-Charge of work who reserve the right to reject any material for bad workmanship, bad quality etc., at any stage and rejected materials shall have to be removed forthwith from the site, within 24 hours. All the size of timber specified in the items shall be met subject to the tolerance permitted as per ISI force at Specifications in force the time i.e. as per I.S. 1003 of 1966.

41. Sand and coarse aggregate shall be taken in measuring boxes. The forming to Municipal by-laws applicable in the area.

42. All sanitary and water supply fittings and pipes etc., will be tested and size pattern to be approved and shall according to latest standard practice as per specification No. 182, to 189, page No. 924 to 926 and 946 to 947 of P.W.D. Hand Book Vol. I and II and to the entire satisfaction of the Engineer-in-Charge as well confirming to Municipal by-laws applicable in the area.

43. For the teak, wood work the tolerance limit shall be as per the latest I.S.S. (i.e. as per IS 1003 of 1966) for the respective items of T.W. doors and windows etc.

44. In case the department decides to make its own arrangement for the supply of readymade doors, windows, ventilators and louvers, the contractors shall be required to erect and fix in line and plumb the frames of all such doors, windows ventilators and louvers for which necessary payment in terms of printed conditions No. 12 of contract will be paid.

45. For all teak wood work after applying a prime coat, one coat of knife paste filler of approved quality shall be provided before applying the remaining two coats of oil paint.

46. The contractor shall make his own arrangement for procurement of steel required for the work. If required necessary tests report regarding tested shall be produced by the contractor.

47. All steel brought by the contractor shall be of tested and shall conform to I.S.608:1995 as amended up to date and in force at time of execution in addition contractor shall have to send samples from all categories of steel brought at site by him to Govt. Laboratory or other Laboratory as directed by Engineer-In-Charge for the test described in above I.S. The Contractor shall also have to produce evidence that the steel brought by him is of tested variety by producing necessary vouchers/bills. Any category found of untested variety or found to have failed in Laboratory test shall have to be and removed by the contractor from site of work at once. All testing charges to be paid to Laboratory shall have to be paid by the contractor and the department shall not reimburse expenses on this account.

48. The lime shall be of approved quality free from any impurity, Katni or Satna or Rajuri lime obtained from approved lime dealers, who will be the members of Lime Association of India. Whenever directed test results in respect of lime shall be furnished and lime found below the required test standard removed from the site within seven days after written order is received from Engineer-in-Charge. Only un slacked lime will be

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allowed to be brought on site and entire process of stacking and making mortar in power driven mechanical mixer will be done at site of works.

49. All the measurements of earth filling (excepting that inside the plinth of the Buildings) in this contract shall be taken by having sectional measurements by taking by ground levels starting the work and the final levels after the work and the final levels after the work is completed. Intermediate measurements for such filling shall be taken by spot levels thus finding average depth. The quantity of filling mentioned in items of Schedule 'B' below plinth is only approximate. The contractor shall carry out the actual quantity that is found necessary in the group or any where else in the area outside his group as directed by the Engineer- In-Charge without any extra quantity for any reason whatsoever.

50. Nothing extra shall be paid for dewatering the foundation pits and/or trenches and removing collapsed soil from the foundation pits/and/or trenches due to monsoon or due to any other cause.

51. Earth cutting , rock cutting and earth filling items of W.B.P. shall have to be executed irrespective of the group areas in the entire site of the scheme, wherever directed by the Engineer-In-Charge.

52. Shuttering shall be rigidly constructed of approved materials and shall be true to shape as per dimensions shown in the drawings for R. C. C. members. In case of timber shuttering etc. timber shall be of quality, well seasoned though not too dry and free from loose knots, holes or other defects. All timber in contract with concrete shall be wrought on two edges and one face, the materials being assembled with un-wrought faces and the outside joint shall be sufficiently tight to prevent leakage of cement grout and to prevent formation of fungus or other blemishes. Faulty joints shall be rectified. Openings for the inspection of the inside of the shuttering and for the escape of water used for washing out shall be formed so that they can be closed before concrete is laid. It shall be so constructed as to permit easy remove of the shuttering and shall be either nailed, screwed, bolted so as to rest in the correct shape, during consolidation of the concrete, shuttering shall be line to line braced and strutted to prevent deformation under the weight and pressure of the wet concrete constructional load and other forces during concreting operation from works shall be struck off after following minimum period has lapsed :-

Shutters of walls, columns and vertical sides of beams	48
hours.	
Props, underneath slabs, spanning up to 4.5 meters	7 days
Spanning over 4.5 meters	14 days
Props. underneath beams spanning up to 6 meters	14 days
Spanning over 6 meters.	21 days

The No. of props, their sizes and disposition shall be such as to be able to safely carry the full dead load of slab, beam as the case may be including the live load using pouring of concrete etc.

53. All R.C.C. work shall be as per I. S. Specification and as per standing orders and practice prevailing in Division. All the items are to be carried out as per the details supplied and as directed by the Executive Engineer or his authorised representative. Work shall be done in a work-man-like manner and of the entire satisfaction of the Engineer-in-Charge.

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54. The contractor shall inform the dates of casting and R.C.C. works five (5) days in advance in writing to the department and shall fix the programme for the same with Executive Engineer or his authorised representative so that the same is communicated in time to higher authorities. Any change in programme shall also be intimated in writing in time to the Engineer-In-Charge.

55. The contractor shall see that necessary arrangement for holes are provided in R.C. C. work as required for plumbing work, and for electrical pipe etc. at the time of execution as directed without extra any payment. The necessary opening for mixing the common electric lights shall be made in the partition wall between baths and W.C's as directed by the Engineer-In-Charge and the same shall be properly finished. The work as above is to be executed without any extra cost.

56. All R.C.C. work after opening the shuttering shall be made rough as required in order to have proper grip for plaster. The unevenness if any, shall be removed and surface brought in line and level without any extra cost by applying C.M. (1:2)

57. All R. C. C. work will be measured and paid as per the dimension as actually cast in from work according to drawing finishing in cement mortar and neeru wherever required shall be done as per the finish provided to the adjacent masonry but the same will, not be measured and paid for separately and such finishing is included in the rates of a all R.C.C. items concerned.

58. (a) Reinforcement shall be accurately, fixed and maintained in position as shown in the bar bending scheduled on the drawing and as directed wires shall security tie the bars which are intended to be concreted. Immediately before placing and binding etc., to be cleaned, if necessary. The binding wire shall be 16 guage.

(b) The vertical distances between successive layers of bars in beams of similar members shall be maintained to the provision of M.S. space bars of not less than 23 mm to be inserted at such intervals so that the main bars do not sag between adjacent space bars.

59. Wherever required or directed the contractor should provide anchorage bars or extensions at junctions and other places for proper anchorage's and binding with other works without any extra cost.

60. All R.C.C. work shall be done as per detailed specifications given and according to drawing and as directed. Concrete shall be mixed in power driven concrete mixer to ensure maximum efficiency. For R.C.C. columns, beams and slabs, approved type of vibrator shall be used by the contractor at his own cost for compacting the concrete.

61. The Contractor shall provide and fix requisite (saddles) rings to hold reinforcement in R.C.C. slab work and tapered teak wood plugs of required sizes in B.B. Masonry wherever directed without any extra cost.

62. Contractor shall remove all unevenness caused while casting trimming the R.C.C. surface by plastering with cement mortar (1:2) and bring all the work in perfect line, level and plumbing immediately after removal of all from. The surface after casting should closely roughened as required or as directed so as to have proper bend for cement plaster without any extra cost.

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63. In case of R.C. slabs and all R.C.C. work the reinforcement shall be as per plan or as required, if necessary two way reinforcement or doubly reinforcement will be provided in slabs or in beam respective for which nothing way extra shall be paid. The details of reinforcement shown at the time of tendering may be changed and the contractor shall carry out the same without claiming anything extra.

64. The contractor shall provide or fix requisite M.S. saddles cover cubes to hold reinforcement in R.C.C. slab work and tapered T.W. plugs of required size in B.B. Masonry wherever directed without any extra cost.

65. Wherever the items under this contract includes finishing the rate of the item includes the cost of the finishing, nothing extra shall be paid for finishing and also for such additional thickness nothing shall be paid where the cubical content or the specified content is the unit of measurements.

66. Wherever goal's channels, chambers, open drains in flooring are required to be carried out, nothing extra be paid for such work in measurement and only measurement for flooring shall be paid, without any allowances for such curvatures horizontally or vertically. Similar will be case in case of cement plaster or in other items where plaster has to be provided as in case of R.C.C. works.

67. Wherever not specifically mentioned in the description on of the respective items of their corresponding specifications the following proportions shall be used for item of work involving use of cement.

- |     |   |                      |
|-----|---|----------------------|
| (a) | Cement mortar for masonry<br>except half brick masonry. | 1:6                  |
| (b) | Cement plaster  | 1:4 for inside       |
| (c) | Cement plaster  | 1:3 for outside      |
| (d) | Cement concrete bedding                                 | for foundation 1:4:8 |
| (e) | Cement concrete for flooring                            | 1:2:4                |

68. Where not specifically mentioned in the respective item and specification, thickness of following items on work shall be as under :-

- |     |                            |   |
|-----|----------------------------|---|
| (a) | Cement plaster             | 19 mm thick outside.<br>13 mm thick inside. |
| (b) | Cement concrete bedding    | 120 mm thick.                               |
| (c) | Brick bat concrete bedding | 120 mm thick.                               |

69. All the wood work, iron steel work, shall be given 3 coats of oil paint of approved quality. The rates of items include all these works and no extra payment shall be made for the same. The rate of W.C.C.I. items includes finishing as stated above.

70. Cement plaster finish up to top of plinth shall be sand finished if required an finish above plinth level shall be smooth finished.

71. The contractor shall provide cement wattas directed for sinks, baths and water closets at the junction, of walls and chajjas and slab with parapet wall or making the watertight for which no extra payment will be made. In the case of all sinks and bath rooms and W.C.'s the top of depressed slab and sides shall be coated with 2 coats of hot Industrial Asphalt for ensuring water tightness for which nothing extra shall be paid.

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the Industrial Asphalt will be Bharat refineries. Hindustan Petroleum Caltex and will be applied in 2 coats at the rate of 2.44 kg /5 Sqm. of area in hot liquid state heated to 204 ° C

72. The contractor shall provide adequate slope in the floors of lofts and slabs including terraces for effective disposal of water and shall provide at the junction of the slabs with the walls. Cement warts with asphalt joints 30 cm. in height, asphalt strip 38 cm. in width if directed by the Executive Engineer for which nothing extra shall be paid.

73. The contractor shall arrange slope of flooring as directed and shall also arrange for holes through sinks, W.Cs. and baths for passages of water used for washing of cooking platforms, sinks etc. The verandahs should be properly sloped for effective and proper disposal of rain water spots.

74. Whenever asphalt bitumen etc. as may be stated in his tender, for the purpose of filling expansion joints or water proofing the terrace on sides etc. only standard materials of reputable companies viz. Bharat refineries Hindustan Petroleum Corporation be used. The mark and kind of material shall be got approved from the Engineer-In-Charge before purchasing the materials from the Company Only such approved materials be used in the work.

75. All molding in cement plaster etc., shall be as per drawing and painted as directed for which nothing extra will be paid.

76. Before doing in the bedding in the depression kept for fixing W.C. block industrial asphalt 116 of Bharat refineries or similar material of Hindustan Petroleum Corporation shall be applied in two coats of 2.44 kg. / Sqm. of area in not liquidated stage but heated to a temperature of 204 ° C. The materials around holes kept for pipes etc and around the sides completed as directed for which nothing extra shall be paid.

77. The contractor shall have to connect the internal water supply with the external water supply arrangements without any extra cost.

78. The contractor shall provide at every hydraulic device “Y joints as per drawing if so directed by the Engineer-In-Charge Also down take pipes from over head tanks to ensure constant supply of water for various taps in the tenements. without any

extra cost. If directed orifices-in all taps of ground floor and floor will be provided without any extra cost. If directed orifices-in all taps of ground floor and floor will be provided without any extra cost.

79. The contractor shall give hydraulic and smoke tests for the work of all A.C. pipes and fittings and stone ware pipes as directed.

80. Every endeavor shall be made to give clear possession of the site in one lot and if it is not possible to do so the possession shall be in different lots or which delay, no claim shall be entertained. However on such account, necessary extension of the contract period may be considered on application from the contractor at the right time. The contractor shall show satisfactory progress on the building where clear possession of site is given in case of delay action shall be taken as per contract.

81. After the completion of the job, the contractor shall remove forthwith all his serviceable materials from site of works and all unserviceable debris shall be dumped and

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leveled as ordered within the NMSCDCL area if required or otherwise shall remove the same from site of work if so ordered without any extra cost.

82. After the completion of the job the contractor shall thoroughly clean and wash with acid if necessary all the floors, W.C's. basins, sanitary and water fitting etc., and take necessary precautions to see that they are no way spoiled till actually handed over.

83 (a). Contractor shall after completion of work have to obtain necessary certificate from Municipal Sanitation and anti-malaria authorities for securing water supply from Hydraulic Department. He shall also have to obtain all the required certificates (No objection certificates, plinth certificates etc.) of various departments of the local authority and furnish a completion certificate of building constructed of local Authority.

83 (b). The contractor shall obtain necessary 'No Objection Certificate' from the Health Department, Municipal Corporation or concerned local Authority under Maharashtra Non-biodegradable Garbage. (Control) ordinance 2006 (Mah. ord. IV of 2006) and Maharashtra Plastic Carry bags (Manufacture & usage) Rules 2006 and shall bear all the expenses towards this and no claim what so ever will be entertained by NMSCDCL.

84. All the items of building work and all the water supply and sanitary installations shall be maintained by the contractor through the progress of work and for a period of 12 months after the occupation of the tenements During this period all defective works and leaky fitting or defective items as pointed out by the Executive Engineer shall be replaced by the Contractor failing which, the needful will be done at their risk and cost. This decision of the Executive Engineer in this behalf will be final and binding on the contractor.

85. All items of work shall be completed and thoroughly finished in fine workman-like manner as per directions of the Executive Engineer or his representative before the work is handed over.

86. After completion of the work the theoretical quantity of cement to be used on the work shall be calculated on the basis of the B & C ( P. W. D.) Nashik Div. cement consumption statement showing the quantities of cement to be used in different items of works and whose standard are not shown in the statement, it shall be calculated on the basis of standard formula that may be in use for, in the Maharashtra Public Works Department. over this quantities of cement theoretically calculated. The following variation will be allowed for wastage, making of cement platforms, water tanks etc.

- |   |    |
|---|----|
| a) For the works below 2 lack               | 5% |
| b) For the works between 2 lacks to 5 lacks | 4% |
| c) For works above 5 lack.                  | 3% |

87. The difference in quantity of cement actually issued to the contractor and theoretical quantity including permissible variation if not returned by the contractor shall decamped to be unaccounted, and the cost of same shall be recovered at twice the issue rate including storage charges without prejudice to the provision of the relevant conditions regarding the return of the materials governing the contract. In the event of its being discovered that the quantity of cement used is less than the quantity as ascertained as herein before provided following the quantity of cement not so use shall be recovered

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from the contractor on the basis of stipulated issue rate including storage charges and cartage to site.

88. The provisions made above in item No. 86 to 87 are with out prejudice to the right of the Nashik Municipal Smart City Development Corporation Limited to take action against the contractor for not doing the work according to the prescribed specification

89. In case the work is to be stated and constructed on existing bored pile, pile caps and the beams the new work is to be bounded perfectly with the existing work as directed , Extra anchor bars for binding the new work with the existing work shall be provided wherever required as directed without any extra cost.

90. As per the statements of Weights and measures Act 1955 stipulations have been made in metric systems only and wherever the corresponding equivalent figures in the British unit have been given, the same should be taken as general guidance only. All the materials etc. required for the work wherever possible shall be provided in the metric units only, however no extra payment or reduction in rate shall be considered what-s-Oever where the materials or item is provided in British units for little variation than the exact equivalent of what has been stipulated in the metric system in the tender.

91. Wherever the building materials are manufactured in the metric units and are available in the market, only such materials manufactured in metric units shall be used, in case the material is not manufactured in metric system then only the material manufactured in British Unit shall be used after obtaining written permission form the Executive Engineer.

92. For R.C.C. work and M. S. Reinforcement and cement concreting work shall be paid separately. The mode of measurements and other details for M.S. reinforcement shall be as per specification for item No. 10 of the section B on page No. 64 to the standard specification book of Govt. of Maharashtra (commonly known as “Red Book”) specification attached shall however have precedence and the contractor should please read them carefully.

93. All the building material required for work shall confirm to the relevant I. S. Specifications as named to from time to time.

94. Whatever pipe lines (water as well as drainage) would be passing under or by the side of Buildings will have to be changed realigned as directed without any extra cost. material will be provided by the Department and the labour will be of the contractor. The work on water supply line will have to be done during non supply hours.

95. A contractor shall comply with the provisions of the apprentices Act 1961 and the rules and orders issued there under form time to time. If he fails to do so, his failure will be a breach of contract and the Chief-Engineer, may in his discretion, cancel the contract. The contractor shall also be liable for any violation by him of the provisions of the Act.

96. The successful tenderer will be required to produce to the satisfaction of the specified concerned, authority a valid and concurrent license issued in his favor under provision of the contract labor (Regulation and Abolition Act 1970, before starting the work, On failure to do so the acceptance of the tender shall be liable to be with-drawn and also earnest money forfeited.

97. The contractor shall get the items of the work of sanitary and water supply through licensed plumbers and should also give the name and address of the license plumbers with Municipal Corporation, license No. to be engage on work while quoting tendering for the work.

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98. A. In case of errors omission and or disagreement between written and sealed dimensions on the drawing or between and specifications etc, the following order of preference shall apply.

- 1 .Between actual sealed written dimension or description on a drawing the latter shall be adopted.
2. Between the written or shown descriptions of dimension in the drawing and the corresponding one in the specification the latter shall apply.
3. Between the quantities shown in the Schedules or quantities and those arrived at from the drawings latter shall be preferred.
4. Between the written description of the item in Schedule of Quantities and the detailed description in the specifications of the same item the latter shall be adopted.

B. In case of differences between rates written in figures, and words, the rate adopted by the contractor for working out the total amount of the item will be taken as correct. In other cases, the correct rate would be that which is Lower.

C. In all cases of omission and or doubts and/or discrepancies, in the Executive Engineer whose elucidation (elaboration) or decision shall be considered as authentic. The Contractor shall be held responsible for any errors that may occur in the work through lack of such reference and precaution.

99. To determine acceptable standard of materials and workmanship a sample tenement / block shall be constructed by the contractor complete in all respects including building work fittings water supply plumbing sanitation internal painting external paint color scheme and internal electric work,. Work in the sample block will be a few stages ahead of work in other buildings. All item of work in the sample block will be executed under close supervision of the Executive Engineer in charge. On completion, each of these samples of items of work/ trade approved by the Executive Engineer will be enclosed as 'Guideline Samples'. These will then serve as guiding samples to that further work is executed in strict conformity with materials and workmanship of the sample block.

100. In view of keeping proper record of actions taken from time to time respect of project for proper quality assurance it is to maintain a systematic record in single register for building works . The printed copies of the site registers are available with the respective Executive Engineer at cost of Rs. 700/- per copy. Contractor is to purchase register at their cost as given above before commencement of the work and should make it available to the concerned Deputy Engineer during execution of work.

101. In order to have good quality of reinforcement and structural steel conforming to relevant I.S. Specification, it should be procured from main Producers only.

102. Contractor shall take out necessary Insurance Policy / Policies (viz. Contractor's All Risks Insurance Policy, Erection 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. 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 other company will not be accepted. If any contractor have effected insurance with any Insurance Company, the same will not be accepted and the amount of

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premium calculated by the Directorate of Insurance will be recovered directly from the amount payable to the Contractor for the executed contract work.

103. In the event NMSCDCL orders to conduct function of foundation laying stone or Bhoomipoojan or inaugural marble plate & contractor shall be paid only for the quantities executed for providing marble plate at the current schedule rates.

104. It shall be the responsibility of the contractor to get all the building material tested prior to its use at the required frequency and produce original test reports to the Executive Engineer-II and after his permission, use such materials in the work. The Executive Engineer-I shall have right to reject the work done by the contractor, if this condition is not complied by the contractor.

105. The successful tenderer will have to produce following documents immediately after intimation is received from the Executive Engineer.

i) Registration certificate in original with one attested copy.

ii) Solvency certificate in case the All the Contractors

Partnership deed, power of attorney or undertaking of proprietary concern (as the case may be).

iv) Bar chart showing how contractor is intending to complete different items in the work in

the tender period. (This bar chart will be operative from the date of work order).

v) Rate analysis of all the major items justifying the tender percentage quoted by him.

106. The contractor shall obtain necessary 'No Objection Certificate' from the Health Department, Municipal Corporation or concerned local Authority under Maharashtra Non-biodegradable Garbage. (Control) ordinance 2006 (Mah. ord. IV of 2006) and Maharashtra Plastic Carry bags (Manufacture & usage) Rules 2006 and shall bear all the expenses towards this and no claim what so ever will be entertained by NMSCDCL.

107. The skilled construction workers engaged on site of work / project by the contractor / agency shall be trained by Builder's Association of India's Training Institution and shall be possessing certificate there of issued by NCCET which is a body set up by BAI to develop strategies to perform the tests. The construction agency / contractor shall get the necessary orange band and green band certificate issued by NCCET for each and every skilled construction workers to be engaged on the project site. The construction agency should ensure that skilled construction workers engaged on the work site are trained by BAI and all are having orange band and green band certificate issued by BAI's National Council for construction Education and training.

108. ज्यानिविदादाराकडे /

कंत्राटदाराकडेसर्विसटॅक्सरजिस्ट्रेशनचेसर्टिफिकेटनसेल,त्याकंत्राटदाराच्याकामाप्रित्यर्थदेयकामधून  
नसर्विसटॅक्सचीरक्कमनियमानुसारकापूनघेवूनतीडिपॉजिटमध्येठेवण्यातयेईल .  
सदररक्कमेचापरतावाकंत्राटदारानेकामाप्रित्यर्थसर्विसटॅक्ससंबंधितखात्यालाभरल्याचीमूळपावती  
मंडळाससादरकेल्यानंतरचदेयहोईल जरनिविदाकाराने/  
कंत्राटदारानेसर्विसटॅक्सरजिस्ट्रेशनसादरकेले,तरदेयकामधूनसर्विसटॅक्सकापलाजाणारनाही.

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109. The contractor shall strictly adhere to the quality of material be used during the construction. The contractor shall use those materials specified and approved by the Executive Engineer in charge for the purpose of construction. During the course of construction, Executive Engineer in charge of the construction or by the application of any person under Right to information Act 2005. A sample of materials being used on the site can be taken as per the procedure prescribed by the NMSCDCL for laboratory testing. Incase, if, it is found that, material being used is not as per the specifications or not as per the quality then Executive Engineer shall be held responsible for severe action and the contractor shall be made liable to pay the compensation. The Executive Engineer under whose superintendence and over all control works are getting executed on behalf of NMSCDCL shall decide such issues immediately. In addition to this, the contractor shall also be liable for replacement of the entire material which was found defective during the

course of inspection on the report of laboratory test. The contractor shall also reimburse all the expenses which are required to be paid to the person applying under Right to Information Act 2005. The decision of the Chief Engineer (officer duly authorised by NMSCDCL / Board). In this respect shall be final and binding on the contractor.

110. The labour welfare fund will be deducted at 1% from R.A. bill as per Govt. letter No. BCA / BLDG / 2004 PK / 108 / labour 7A/ Industrial Labour Division Mantralaya, Mumbai.

111. The Insurance premium will be deducted at 1% if the tender cost is above of Rs.25 Lakh & at 0.50% if the tender cost is below of Rs. 25 Lakh from I'st R.A. Bill as per resolution No. PVN / 2309 / NMSCDCL / Insu. Dt. 17/07/2010.

112. All external services such as Roads, SWD, drainageline, watersupply line, electric supply line etc. shall be handed over to respective local bodies/authorities/departments by the contractor at his own cost. The necessary charges if any, payable to local body/department shall be borned by NMSCDCL. It is responsibility of contractor to handover all the services to Local Authorities, Until final Bill will not be paid to Contractor

113. The Project is under financial assistance of development of Smart cities. The Guidelines / Conditions Under development of smart cities are applicable for this project. The Details of scheme are mentioned in the Mission Document which is available Urban Development Ministry's website of Govt of India.

114. Final Bill of Work will be cleared on closing of all outstanding paras of vigilance & Quality Control/ Authority & Technical Audit by Third Party, Quality Monotoring Agency- will be appointed by NMSCDCL.

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# ACCEPTABLE STANDARDS OF MATERIALS IN USE

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Sr. No.	Material	Lab Tests	Acceptable Standards	Freq. of Testing	Sampling as per IS Code
1)	Cement 43 Grade	a) Fineness  b) Soundness  c) Setting Time  d) Compressive Strength N/mm2 3 days.  7 days  28 days	After sieving the residue by weight on 90 micron I.S. sieve not to exceed 10%. Specific surface Sqcm/gm by air permeability method not less than 225 Sqmt/kg. When tested by "Le_Chatelier method" cement shall not have an expansion of more than 10 mm. Initial setting time shall not less than 30 min. Final setting time not more than 600 min. 33    43 53 Grade                          GradeGrade 16.00    23.00 27.00 22.00    33.00 37.00 33.00    43.00 53.00 1) 33 Grade – IS 269:2013 2) 43 Grade – IS 8112:2013 3) 53 Grade – IS 12269:2013 4) PPC                      - IS 1489 (Part-) :1991	One test for Each consignment of 50 M.T. or part thereof  ----- do ----- --  ----- do ----- ---  ----- do ----- --- IS 3535 : 1986	IS : 3535:1986
2)	Sand	a) Fineness Modulus (By Sieve Analysis)	Shall not be more than 3.0 for masonry and first coat of plaster.  Shall not be more than 1.60 for	40 cum or part thereof	IS 2430 : 1986

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		b) Slit content	second coat of plaster. IS 383:1970 Not to exceed 5 % by weight IS 2116:1980	Every 20cum or part thereof consignment IS2430:1986	
3)	Coarse Aggregate	a) Foreign matter i) Coal & Lignite ii) Clay Lumps iii) Materials Finer than 75 micron I.S. sieve iv) Other deleterious materials  b) Aggregate crushing value  c) Aggregate Impact value  d) Los Angeles Abrasion value	Limits of Deleterious Materials Not to exceed 1% by weight. Not to exceed 1% by weight.  Not to exceed 3% by weight.  The Total % of deleterious substances shall not exceed 5% by weight  Shall not exceed 45% for aggregates used for concrete other than wearing surface & 30% for wearing surface.  Shall not exceed 45% for aggregates used for concrete other than wearing surface & 30% for wearing surface.  a) Aggregate for wearing surface concrete work 30% b) For other Concrete work 50% IS 383:1970	On change of source IS 2430:1986  Testing on Change of source  Testing on Change of source  Testing on Change of source	IS 2430 : 1986  Is 2430 : 1986

4)	Bricks A) Ist Class	a) Water absorption b) Crushing strength i) Dry ii) Wet	Not to exceed 20% by weight   Not less than 43.7 Kg/Sq.cm.	One set of test on 5 bricks out	IS 5454 : 1978
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	B) IInd Class	a) Water absorption b) Crushing strength i) Dry ii) Wet	Not less than 32.8 Kg/Sq.cm.  Not to exceed 22%.  Not less than 39.33 Kg/Sq.cm. Not less than 29.52 Kg/Sq.cm.	of every consignment of 50000 bricks  One set of test on 5 bricks out of every consignment of 50000 bricks																
5)	Stone	Water absorption	Not to exceed 5%	Testing on Change of source.																
6)	Cement Flooring Tiles	a) Water absorption b) Transverse strength c) Resistance to wear	Not to exceed 10%  Not less than 3.0 N/mm <sup>2</sup> for wet test The average wear shall not exceed 3.5mm & wear on any individual specimen shall not exceed 4mm for general purpose tiles IS 1237 : 2012	One set of test on 6 tiles for every 2000 tiles.  One set of test on 6 tiles for every 2000 tiles.	IS :4905: 1968															
7)	Cement Concrete Cube		Compressive Strength Kg/Sq.cm.	6 Nos of cubes for every 15.00 m <sup>3</sup> or less quantity per day IS 456:2000 & IS 1199																
			<table border="1"> <tr> <td></td> <td>7 days</td> <td>28 days</td> </tr> <tr> <td>M 10</td> <td>67</td> <td>100</td> </tr> <tr> <td>M 15</td> <td>105</td> <td>150</td> </tr> <tr> <td>M 20</td> <td>135</td> <td>200</td> </tr> <tr> <td>1 : 2 : 4</td> <td>105</td> <td>158</td> </tr> </table>		7 days	28 days	M 10	67	100	M 15	105	150	M 20	135	200	1 : 2 : 4	105	158		
	7 days	28 days																		
M 10	67	100																		
M 15	105	150																		
M 20	135	200																		
1 : 2 : 4	105	158																		
			IS 456:2000																	

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8)	Mild Steel	a) Tensile test Properties i) Ultimate tensile stress N/Sq.mm ii) Yeild stress N/Sq.mm.	Nominal size of bar All sizes Bars upto& including 20mm. Bars over 20 mm. upto& including 50 mm.	M.S. Grade I 410.00 (min.) 250.00 (min.) 240.00 (min.)	One sample For every Consignment of 5 M.T.	IS:2062-2011
		iii) Property Elongation minimum on gauge length 5.65 ( cross sectional area) iv) Tolerance in Weight for each batch	Nominal size of bar For bars 5mm to 50mm mm. 1. Upto and including 10mm 2. Over 10mm &upto 16mm 3. Over 16mm	M. S. Grade I 23.00 + or - 7 % + or - 5 % + or -3 %	For every consignment of 5 M.T. For every consignment of 5 M.T.	
9)	H.Y.S.D. Steel / Deformed bars for Fe 415	Minimum Ultimate tensile stress N/Sqmm Minimum Yield stress N/mm2 b) Elongation & minimum on gauge	For bars 4 mm to 50 mm 4mm to 50mm 14.5%	485 415	For every consignment of 50 M.T. For every consignment of	

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		5.65 (cross sectional area) c) Tolerance in weight	3. Upto and Including +or – 7% 10mm 2. Over 10mm Upto 16 mm + or – 5% 3..Over 16 mm + or – 3%	50 M.T.	
10)	TMT Steel	a) Tensile strength Kg/Sq.mm	10% greater than the measured yield stress		One sample For every consignment of 5 M.T.
		b)Yield stress (0.2 % proof stress) min. Kg/Sq.mm	1. Bars upto& including 20 mm 42.5 Min. 2. For bars over 20 mm upto and including 40 mm 42.5 Min. 3. For bars over 40mm 42.5 min.		
		c)Elongation % (min.) on gauge length 5.65 x (square root of cross sectional area)	14.5 %		One sample For every consignment of 5 M.T.
		d) Tolerance in weight	1) Upto and including 10 mm + or – 7 % 2) Over 10mm & including 16mm + or – 5 % 3) Over 16mm + or – 3 %		
11)	Chequered Flooring tiles	a)Water absorption	Not to exceed 10%		IS 4905:1968
		b)Transverse strength	Not less than 3.0 N/mm <sup>2</sup> for wet test IS 1237:2012		
		c)Resistance to wear	The average wear shall not exceed 2 mm & wear on any individual specimen shall not exceed 2.5 mm for heavy duty tiles.		
11)	Autoclaved Cellular Concrete block (A.A.C. Block)	a) Density Test	IS 2185 ( Part 3 ) : 1984		IS2185(part3):1984
		b) Compression Test	Table - 1		
12)	Solid Precast	a) Density Test		One set of 14 Blocks shall be	IS2185(part I): 2005

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	Cement Concrete block	b) Compression Test c) Absorption test	IS 2185 (part-1) : 2005 Table - 2	taken from every lot / consignment lot of 5000 blocks IS2185(partI):2005	
13)	Ceramic tiles / Vitrified tiles	a) Water absorption test b) Modulus of rupture	IS 15622 : 2006 Table – 09 to 12	One set of 14 tiles for every lot of more than 1000 m <sup>2</sup> to 5000 m <sup>2</sup> of tiles IS 13630(part 15) : 2006	IS 13630(part 15) : 2006
14)	Paver Block	a) Water absorption test b) Compression test	IS 15658 : 2006 Table – 1 & Table -3	One set of 11 block for every consignment of 50,000 Blocks IS 15658 : 2006	IS 15658 : 2006
15)	Timber	a) Moisture Content test b) Density test	IS:287:1993 Table No. 1	Every one cum or part thereof	Is : 8720 : 1978 & IS : 1708 : 1986

Sr. No.	Material	Lab Tests	Acceptable Standards	Freq. of Testing	
10)	Flush door shutter	1) Knife test	The result shall be reported as pass standards, excellent or poor. Door shutter designated as poor shall be declared as unsatisfactory.	No. of Shutters	Sample size
				26-50	1
				51-100	2
				101-150	2
				151-300	3
				301-500	4
				501 & above	5

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		2) Glue adhesion test	A specimen shall be considered to have passed the test if no delamination has occurred in the glue lines in the plywood or if no single delamination more than 50mm in length and more than 3mm in depth has occurred in the assembly glue lines between the plywood and stile and rail.	----- do -----
		3) End immersion test	There shall be no delamination at the end of the test	----- do -----
		4) Impact indentation test	If the average of all the tests on a face is less than 100N, the shutter shall be deemed not to have passed the test	One sample up to 1000 shutter's of the same size.
		5) Slamming test	There shall be no visible damage caused to any part of the door by 10 successive impacts.	----- do -----
		6) Screw holding Power test	The required load to withdraw the screw from the face as well as from the edge of the door shutter completely shall not less than 1000N. On withdrawal there shall be no visible damage to the surface either by delamination or extra chipping off at the points of withdrawal.	----- do -----
11	Water		Requirement (Desirable limit)	Frequency of Testing
	1) Ph Value		Shall not be less than 6 (Following values are in mg/litre maximum)	One sample must be tested. Further testing will be necessary for every change of source.
	2) Total dissolved solids		500 mg /l	
	3) Total hardness as CaCO <sub>3</sub>		300mg /l	
	4) Chlorides (as Cl)		500 mg/l (R.C.C.), 2000 mg/l (P.C.C.)	
	5) Sulphates as SO <sub>4</sub>		400 mg/l	
	6) Fluorides (as F)		1.00 mg/l	
	7) Nitrates as NO <sub>3</sub>		45 mg/l	
	8) Calcium as Ca		75 mg / l	
	9) Organic solids		200 mg / l	
	10) Inorganic solids		3000 mg / l	
	11) Suspended matters		2000 mg / l	

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Sr.No.	Type of Materials	I.S. Code No.	Type of Tests
1.	Bib Taps, Stop Valves	IS - 781 of 1984	Internal Hydraulic Pressure
2.	Sluice Valve	IS - 14846 of 2000	Hydrostatic Test
3.	Water fittings	IS - 1703 of 2000	Hydraulic Test
4.	Door Handles	IS - 208 of 1996	Dimensional Requirement
5.	Tower Bolts	IS - 204 (I) of 1991	Dimensional Requirement
6.	Aldrops	IS - 2681 of 1993	Dimensional Requirement
7.	Plastic Seats and Covers for Water Closets	IS - 2548 (I) of 1996	(i) Strength test of seat (ii) Impact Resistance Test (iii) Water Absorption Test
8.	Plastic Flushing cistern for water closet and urinals.	IS - 7231 of 1994	(i) Distortion of Dead Load Test (ii) Impact Test
9.	Cast Iron Manhole Covers and Frames	IS - 1726 of 1991	Load Test
10.	Asbestos Cement pipes and Corrugated / Semi Corrugated Sheets	IS - 5913 of 2003	(i) Water Absorption Test for Pipe and Sheets (ii) Impermeability Test for AC Sheet (iii) Acid Resistance Test for AC Pipe and AC Sheet (iv) Load Bearing Capacity Test for AC Sheet (v) Hydraulic Pressure Test for AC Pipe (vi) Transverse Crushing Test for AC Pipe (vii) Hydraulic Bursting Test for AC Pipe (viii) Longitudinal Bending Test for AC Pipes of 150 mm dia. and less. (ix) Straightness Test for AC Pipe (x) Frost Cracking Test for AC Sheet
11.	Paints		
	(a) Red Oxide Primer	IS - 123	Test as per I.S.
	(b) Synthetic Enamel	IS - 101 / IS - 2932	Test as per I.S.
	(c) Plastic Emulsion	IS - 541 / IS - 101	Test as per I.S.
	(d) Cement Paint	IS - 541 / IS - 101	Test as per I.S.
	(e) Oil Bound Distemper	IS - 427 / IS - 101	Test as per I.S.
<p>Note :- It shall be the responsibility of the contractor to get forwarding letter addressed to in-charge of laboratory, signed from the D.E. / E.E. well in advance &amp; obtain &amp; produce test reports to E.E. prior to such materials are actually used by him in the work.</p>			

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## LIST OF APPROVED ELECTRICAL MATERIAL MATERIALS (INTERNAL ELECTRIFICATION)

The materials accessories fittings etc. to be used on the electrical and pumping works shall be one of the following particular make. The descreation of selection of any particular make shall rest with the Executive Engineer-in-charge of the work and same is binding on the contractors.

Sr. No.	Materials	Make
1.	PVC insulated and shathed wires, alluminium conductors 650 volts grade (I.S.I.) marked strictly confirming to latest I.S. specification.	ICC,Nicco, Gloster, Sybvex, V-Plast, Pyroflex, New-Cab,Gulmarg, Paragon, Polycab, Vishal, Rolicab, Fixocab, Mahindra, Finolexa, Sunlight, Sriram.
2	Heavy duty armoured cable / unarmed cables 1100 volts grade with copper or alluminium conductors to IS specification.	Sylvex, Gloster, Asian, Apar, Space-cab, Gulmarg, ICC, CCI, Polycab, Vishal, Rolicab, Fixocab, Mahindra, Ashoka, Sunlight, Sriram.
3	Single pole tumbler switch 5 Amps. 15 Amps. BK with porcelain base with bakelite cover (I.S.I. marked)	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK, Western.
4	3 Pin plug socket 5 Amps 15 Amps porcelain base with bakelite cover (I.S.I) marked.	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK.
5	Coiling rose all bakelite.	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK,
6	Skirty type angle holder, batten holders, pendent holders, (all of Shite) with internal brass ring heavy duty type.	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK,
7	Flush type coiling rose / (white) heavy duty.	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK,
8	Flush type switches 3 Pin plug and other accessories (I.S.I.) marked white.	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK.
9	Ticino type D.P. switches 30 Amps 250 volts (heavy duty with incicator lamp and white cover.)	Kalki, Precious, Safran, Khosla, Kay (s) Leader, Veto, Cona, Standard, Armlite, CPL, Precision, Modern, Shoper MK, Western.
10	W.T. Bulked fitting (Deluxe type) conduit entry type only.	Glokite, Bajaj, G.E.C., Philips, Crompton, Monarch, Altralite.
11.	Iron and brass screws.	Nettle-fold only (GKW)
12	M.F. Lamps 230/250 volts, (I.S.I. marked)	Philips, Osram, Bajaj, Crompton, Bengal, Mysore, Elecron H.M.T.
13	Motal clad distribution board DPIC / switch with rewirable fuses and change over switches.	Stanley, Sentinel, Kalki, Paras, KEW, Joshica, Ketco, Slater.
14	Wall plugs (PVC)	Pylo-Grip (PVC) or equivalent approved

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		make and quality.
15	T.W. board and blocks (Front planks shall be in one piece for blocks up to 8 x 10 size. For larger sizes the same may be in two pieces, bottom piece carved with top plank. As per plan or as per approved sample.	Double folding polished board made from good teak wood (if specified and covered with sunmica) 1.5 mm thick.
16	Bolls or Buzzors (Double magnet coil 250 volts) and Ding Dong bells.	Veto, Edision, Philips, Leader, Glolite, Fider, Homa.
17	Fluorescent tube light fitting (with copper choke only) and mercury vapour lamps fittings complete and accessories.	Glolite, Crompton, Kalki, Philips, G.E.C. Bajaj, Monarch, Altralite, Mysore.
18	Coiliggfans (double ball bearing type)	Crompton, G.E.C. Usha, Orient, Innova, Almonarch, Bajaj
19	Pedestal type and wall fans.	Rallifan, Crompton, Orient, Innova, Almonarch, Usha, Bajaj
20	MCB's (ISI marked)	MDS, Standard, Datar, Schemes, LT, Vorsatrip Indo-Asina, Havells.

Sr. No.	Materials	Make
21	Automatic pump controller.	Syntronics or equivalent approved make.
22	PVC insulated and PVC sheathed wire.	Sylvex, V-Plast, Sandeep, Puroflex, Relicab, Polycab, Fixocab, Gloster, Finolex, Colt, Gulmarg, Vishal, Nicco, of ISI marked.
23	Monoblock pump set	Beacon
24	Direct on line and star delta starter (Air break fully automatic push button type)	Siemens / LT / LK
25	TPIC switches with HRC fuse	English Electric, Siemens, LT/LK, Standard, Havells.
26	Ammeters, Viltmeters	Automatic Electric
27	Rotary selector switches for Ammeters and Viltmeters	LT/LK, Kaycee, Thakoor
28	Heavy duty gun – metal full way / sluice valve	Leader, Sant, New, Pearl, Confirming to latest IS Specification preferably ISI marked and approved by MCGB.
29	Heavy duty gun – metal non return or reflux valves (vertical / horizontal)	Leader, Sant, New, Pearl, Confirming to latest IS Specification preferably ISI marked and approved by MCGB.
30	Indicator lamp ( 1' dia)	Siemens, Esson, STM or Technik or equivalent approved make.

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31	M.S. Nut – bolts	Tata, GKW, Ashok, Fit-tight or equivalent heavy duty of approved make.
32	E.L.C.B. (ISI marked)	L.T. Havells, Standard, Siemens, Datar, Delta, Neptune, Electoguard or equivalent make approved by respective supply co.
33	Capacitors (Metal Dielectric) type	Any ISI marked of approved make
34	Heavy duty cast iron sluice valve (As per ISI) 780 and 2906 :1984	Kirloskar, HVC, IUI, Burn or equivalent approved make.
35	Lift Elevator	KONE, Schindler, OTIS, Thyssen Group

Sr. No.	Materials	Make
36	Heavy duty cast iron non return : and reflux valve with by pass arrangements (As per IS – 5312 Part –I / 1969)	Kirloskar, Bondeo or any approved confirming to latest I.S. specifications.
37	Cast – iron heavy duty spring loaded foot valve with internal gun metal parts.	Swati makes.
38	Transformer oil (ISI marked) (with high viscocity)	Asian, Power – oil or any equivalent approved make.
39	PVC casing and capping and accessories (As per ISI)	Precision , Circle-Ark, Diamond, Royal, Plast, Swastik, Asian.
40	Rigid, HMS PVC conduits and accessories, (ISI marked with embossing)	Asian, Diamond, Swastik, Circle-Ark, Precision
41	Pressure Gauge.	Uday, Fie-big

And the material approved by the NMSCDCL

Note: Government of India has notified certain Electrical materials to be used on the works shall be of ISI marked only. In such cases, only ISI marked materials shall be allowed to be used on the work which shall be noted and ascertained by contractors before quoting their rates, although a number of makes are mentioned above. All materials must confirm to latest I.S. specifications applicable.

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# **STANDARD CEMENT CONSUMPTION**

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## STANDARD CEMENT CONSUMPTION

Sr. No.	Item	Unit	Requirement in bags
<b>PLAIN CEMENT CONCRETE</b>			
1.	Cement concrete (1:1:2)	Cum	9.76
2.	Cement concrete (1:2:4)	Cum	5.84
3.	Cement concrete (1:3:6)	Cum	4.05
4.	Cement concrete (1:4:8)	Cum	3.20
5.	Cement concrete (1:5:10)	Cum	2.52
<b>REINFORCEMENT CEMENT CONCRETE</b>			
6.	Cement concrete M-15 (1:2:4)	Cum	5.90
7.	Cement concrete M-20 (1:1½ :3)	Cum	6.90
8.	Cement concrete M-25	Cum	8.50
9.	Cement concrete M-30	Cum	9.20
10.	Cement concrete M-35	Cum	10.20
<b>BRICK WORK</b>			
11.	B. B. masonry in C.M. 1:6 proportion	Cum	1.44
12.	B. B. masonry in C.M. 1:8 proportion	Cum	1.13
13.	Half brick masonry in C.M. 1:3 proportion	Sqm	0.22
<b>MASONARY</b>			
14.	U.C.R.S. masonry in C.M. 1:6 proportion	Cum	1.77
15.	C.R.S. masonry in C.M. 1:5 proportion	Cum	1.80
16.	C.R.S. masonry in C.M. 1:6 proportion	Cum	1.50
<b>DAMP PROOF COURSE</b>			
17.	Providing and laying damp proof 50 mm thick in (1:2:4)	Sqm	0.35
18.	Finishing the terrace slab 20 mm in cm 1:3 proportion	Sqm.	0.20
19.	Providing water proofing to W.C. and bath	Sqm.	0.276
20.	Providing water proofing to W.C. and bath including brick bat coba	Cum	4.00
<b>PLASTERING</b>			
21.	Providing internal cement plaster 6 mm thick single coat in C.M. 1:4	Sqm.	0.045
22.	Providing internal cement plaster 6 mm thick single coat in C.M. 1:3	Sqm.	0.07
23.	Providing internal cement plaster 12 mm thick single coat in C.M. 1:5	Sqm.	0.08
24.	Providing internal cement plaster 12 mm thick single coat in C.M. 1:4 proportion	Sqm.	0.10
25.	Providing internal cement plaster 12 mm thick single coat in C.M. 1:3 proportion	Sqm.	0.12
26.	Providing internal cement plaster 20 mm thick single coat in C.M. 1:3	Sqm.	0.19
27.	Providing internal cement plaster 20 mm thick single coat in C.M. 1:5 in two coats	Sqm.	0.13
28.	Providing internal cement plaster 20 mm thick single coat in C.M. 1:5 in single coat	Sqm.	0.13
29.	Providing internal cem4 in two coatsent plaster 20 mm thick single coat in C.M. 1:4 proportion	Sqm.	0.15

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30.	Providing internal cement plaster 20 mm thick single coat in C.M. 1:3 proportion in two coats	Sqm.	0.19
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Sr. No.	Item	Unit	Requirement in bags
31.	Providing internal cement plaster 25 mm thick single coat in C.M. 1:4 proportion in two coats	Sqm.	0.22
32.	Sand faced plaster in two coats	Sqm.	0.22
33.	Rough cast plaster in two coats in C.M. 1:4 proportion	Sqm.	0.22
34.	Providing flush grooving pointing in C.M. 1:3 for brick work	Sqm.	0.03
35.	Providing flush grooving pointing to stone masonry in C.M. 1:3 proportion	Sqm.	0.025
36.	Providing tuck pointing with C.M. 1:3 proportion	Sqm.	0.05
37.	Providing weathered pointing in C.M. 1:3 for single masonry.	Sqm.	0.04
38.	Providing vee pointing for stone masonry in C.M. 1:3	Sqm.	0.03
39.	Providing fine finish 1:5 mm thick over green surface	Sqm.	0.044

### **PAVING, FLOORING, FINISHING AND DADO**

40.	Providing and laying R.S.H. flooring 25mm to 30mm thick on bed of 1:6 C.M. and pointing C.M. 1:3	Sqm.	0.135
41.	Providing and laying R.S.H. flooring 40mm to 50mm thick on bed of 1:6 C.M. and pointing C.M. 1:3	Sqm.	0.14
42.	Providing and laying R.S.H. flooring 50mm to 60mm thick on bed of 1:6 C.M. and pointing C.M. 1:3	Sqm.	0.150
43.	Providing and laying polished shahabad stone flooring 25mm to 30mm thick on bed 1:6 proportion	Sqm.	0.13
44.	Providing and laying polished tandur stone flooring 25 mm to 30 mm thick on bed 1:6 proportion	Sqm.	0.13
45.	Providing and laying polished Kotha stone flooring 25 mm to 30 mm thick on bed 1:6 proportion	Sqm.	0.13
46.	Providing and laying skirting and dado of polished shahabad stone 25 mm to 30 mm thick 1:4 C.M.	Sqm.	0.18
47.	Providing and laying skirting and dado of	Sqm.	0.18

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	polished tandur stone –do--		
48.	Providing and laying c.c. flooring 40 mm thick with c.c. 1:2:4	Sqm.	0.36
49.	Providing and laying c.c. flooring 50 mm thick with c.c. 1:2:4	Sqm.	0.44
50.	Providing and laying flooring of plain cement tiles of 25 cm x 25 cm on bed 1:6 for flooring	Sqm.	0.15
51.	Providing and laying flooring for dado and skirting on polished surface 1:4 proportion	Sqm.	0.18
52.	Providing and laying coloured tiles 25 cm x 25 cm size for flooring	Sqm.	0.15
53.	Providing and laying coloured tiles 25 cm x 25 cm size for dado skirting	Sqm.	0.18

Sr. No.	Item	Unit	Requirement in bags
54.	Providing and laying white glazed tiles 150 mm x 150 mm for flooring	Sqm.	0.22
55.	Providing and laying white glazed tiles 150 mm x 150 mm for dado and skirting	Sqm.	0.21
56.	Providing and laying gray cement base mosaic tiles for flooring 25cm x 25cm	Sqm.	0.15
57.	Providing and laying gray cement base mosaic tiles for dado 25cm x 25cm	Sqm.	0.18
58.	Providing and laying machine cut white makrana flooring	Sqm.	0.17
59.	Providing and laying machine cut white makrana dado	Sqm.	0.18
60.	Providing and laying in situ marble mosaic		
	Gray cement	Sqm.	0.20
	White cement	Sqm.	0.13
61.	Providing and laying in situ marble mosaic for dado		
	Gray cement	Sqm.	0.20
	White cement	Sqm.	0.28
62.	Providing and laying in required position flooring of broken china	Sqm.	0.30
63.	Providing and laying polished shahabad stone flooring 25 mm to 30 mm thick for tread and riser	Sqm.	0.18

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# **SCHEDULE 'A'**

**(NIL)**

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## **SCHEDULE 'B'**

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**Schedule 'B'**  
**Memorandum showing items of the work to be carried out.**

Item No.	Quantities estimated but may be more or less	Item of work	Estimated Rates (Rs.)		Unit	Total amount according to estimated quantities
			In Fig.	In Words		

ATTACHED SEPARATELY

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Note 1 - All work shall be carried out as per P.W.D. Hand Book and other specifications of the Division or as directed.

Note 2 - All the columns in the schedule be filled in, in ink and the total of the entries in the last column should be by the contractor under his signature.

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Note 3 - Rates quoted include clearance of site ( prior to commencement of work and at its close) in all respects and hold good for work under all conditions site, moisture, weather etc.

( Signature of tenderer)

(Signature of Executive Engineer)

Note - To be continued on additional sheets if found necessary

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# **SPECIFICATION**

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## DETAILED SPECIFICATIONS

SECTIONS	CONTENTS
A	Excavation
B	Materials
C	Concrete and Mortar
D	Stone Masonry
E	Brick Masonry
F	Plaster: Cement / Neeru
G	Timber Work
H	M.S. Doors And Windows
I	Painting
J	Specification for various types of Flooring
I	Drainage, Sewage & Water supply (General)
L	Mode of Measurements
M	Specification for Plantation
N	Technical Specification

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# **DETAILED SPECIFICATIONS FOR CIVIL WORKS**

## **DETAILED SPECIFICATIONS**

- Note** : (1) Concrete, Steel, Paints etc. shall confirm to the I.S.I. except otherwise specified.
- (2) The mode of measurement shall generally follow IS-1200 (Revised) along- with Other applicable parts except otherwise specified.

### **SECTION – A**

#### **EXCAVATION**

The excavation shall be carefully done to the levels, shapes and dimensions as shown in figures on the Drawing or as required by the Architect to receive bed concrete. Should any of the excavation be taken down below the proper levels the contractor shall fill in such excavation if so instructed by Architect at his own expenses with M-100 concrete, well rammed in position until it is brought up to the proper level. Filling in with excavated material will not allowed for this purpose; however the Architect's decision shall be final in such cases.

If the foundation pits and trenches are made broader or longer than that shown on drawings, the extra breadth and length shall be filled in with earth, rammed hard after the foundation are built. The contractor shall at his own expense and without extra charge, make provision for all shoring, strutting, pumping, dredging or bailing out water. The foundations shall be kept free from water while the work is in progress. The contractor shall also remove such portions of boulders or rock, as are required to make the bottom of the foundations horizontal and level. The foundations shall be inspected and passed by the Architect before any filling work is commenced.

The excavated useful stuff shall be used for filling up the sides of the foundations and between the plinth walls in layers not exceeding 23 cm. properly rammed and watered. All surplus earth left over shall be either spread or deposited on the site as required by the Architect. However, contractor would be paid for this work as per the Tender Rate.

The measurements of work shall be exact length, width and depth of the foundations according to end as shown on the Drawings of the Architect and the depth shall be measured vertically. It shall be measured as per Drawings only.

Any excavation shall include labour for excavation, spreading or stacking the excavated stuff within a radius of 15 Mtr. on site of work.

No extra shall be allowed for planking and strutting or shoring of sides of excavation provided for preventing the sides from sliding.

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## Excavation in Rock

Cutting in rock shall be done either by blasting or chiseling, as directed, to the required widths, depths and lengths. As far as possible the beds should be made in level.

Rock excavation shall be measured by working out levels before and after excavation measured from a permanent Bench Mark. The rates shall be per Cubic Meter.

In case of small work of rock excavation the measurements of excavated rock shall be made with stacks which shall be made with the spoils without leaving any voids and the rate shall be per Unit of one Cubic Meter. All excavation should be done as per Drawings and to the required width, breadth and depth.

A deduction of 20% shall be made in measurements for voids if work is measured by stack measurements.

The spoils of rock excavation will be the property of the Employer.

Contractor has to obtain necessary permission in writing for blasting from the concerned Govt. Architects / parties if required, before commencement of blasting work and during execution. However, Employer may make use of his good offices in giving necessary assistance to contractor in obtaining such permission, if so desired by contractor.

Contractor has to pay all the necessary fees for obtaining such permission for blasting.

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## SECTION – ‘B’

### MATERIALS

Note: Wastage: The contractor shall allow in his rates for all wastages in all materials, Used or to be used for this work by him.

#### STONE

Stone for rubble masonry shall be the best of its kind, sharp angles and free from flakes, of quality approved by the Architect.

Stone for cut stone work or masonry work shall be the best of its kind, sound, durable, free from flows, cracks, veins, crystals, minerals, salt, cavities or other defects and it shall be of uniform texture. No earthy discolored or weathered or water born stones shall be laid on their natural beds and properly bounded in the work. It shall be from a quarry approved by the Architects. Stones should conform to I. S. specifications.

#### SAND

Sand to be used in concreting shall be clean and of approved quality and from approved places by Architect, free from salt, dust or other impurities. It shall be washed with clean water, if required, before use. Screened sand shall be used for plaster and masonry work. Sand should conform to I. S. specifications. No extra charges shall be paid for washing or screening wastage of sand.

#### METAL

Metal for concrete in foundation work shall not be larger than 40 mm. Gauge or smaller than 25 mm and should be free from all dust or earthy substances and of stone approved by the Architects. Flat stone chippings shall be rejected. Metal for R. C. C. Work No. 1 may be 6 mm. to 12 mm. And No. 2 may be 12 mm. To 20 mm. Size (Carse aggregate in R. C. Concrete). The larger aggregate (No.2) shall pass through 25 mm diameter mesh but not through 12 mm. Dia mesh. The smaller aggregate (No.1) shall pass through 12 mm dia. Mesh but not through 5 mm dia mesh. Metal No. 3 for plain cement concrete may be 40 mm to 25 mm. And shall pass through 40 mm. Dia. Mesh but not through 25 mm. Dia mesh. The crushing strength of the metal shall be as per I. S. specifications. All metal shall be as per I. S. specifications. All metal shall be of approved quality by the Architects.

#### NEERU

Neeru shall be made out of the best quality materials. The lime shall be reduced to fine powder by grinding in a motor mill with 160 turns. The neeru shall be kept moist until used and no more than that can be consumed in a week shall be prepared at a time. Before using the neeru, it should be tested that there are no unslaked particles, and it should be get approved from the Architect. ‘Saigol’ if it is of quality approved by the Architects shall be used in place of neeru. Neeru shall be sieved with fine seive before mixing with water.

#### LIME

The best quality of hydraulic lime from a locality approved by the Architects, properly burnt, shall be slacked with fresh water on the site and used on works. The impurities including salt. Lime should conform to I. S. Specifications.

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## BRICKS

Bricks shall be well burnt bricks of a quality approved by the Architects, free from lumps or grit, well burnt, sound, hard, and with sharp edges and shall give a ringing sound when struck with a mallet. They shall be of uniform size. No brick after 24 hours immersion in water shall absorb water more than 15% per standard practices and approved by the Architect. The bricks should conform to I. S. Specifications.

## TIMBER

Timber shall be of best quality teak wood or as specified in the schedule of quantities, of the best descriptions, perfectly dry, well seasoned, free from sag wood, sound, straight, free from large and loose knots, cracks, shakes and other defects and any appearance of rot. It shall be of a quality approved by the Architects. Ply wood shall be of standard make and approved by the Architects.

## MILD STEEL, TER STEEL, STRUCTURAL STEEL ETC.

All steel work shall comply with the Indian Standard Specifications for Structural as well as that for reinforcement. The surfaces shall be free from rust. All steel shall be tested and shall be of Tata's or other equivalent manufacturers and approved by Architects. All steel should conform with the latest IS-226 and IS-432 as applicable. All steel shall be tested in Laboratory before putting it in use and test results are not upto the standard, then Architect may reject the steel.

Reinforcing bars and rods 6 mm. Of higher in diameter, shall be supplied by the Employer at the rates and place of delivery mentioned in Schedule – A of the tender documents.

The Bars and Rods shall be supplied according to the available length and the supply be at the rate stipulated in Scheduled of the tender.

The contractor shall place firm indents of his monthly requirements not less than three months in advance. The contractor shall be responsible for all consequences that may arise of his failure to comply with these requirements of the procedure that may be laid therefore.

The contractor shall make suitable arrangements for storage of steel supplied by the Employer. The Employer's representative shall have the authority at all times to inspect the storage arrangements and to suggest modifications and improvements if any, and the contractor shall comply with the same.

The storing arrangements shall be such as to afford convenience of the inspection and check of materials. Bars of the same size, length, shape and grade shall be assembled in stack and marked distinctly.

The contractor shall at all times, maintain proper records showing the basis of indents, the receipts and the utilisation of the steel supplied by the Employer and these shall at all times, be open for inspection by the Consultants.

The steel bars shall be issued on the basis of weight of steel. The weight of shall be arrived at by measuring the lengths of the bars and multiplying the same by the standard weights as per unit length given in the Table below, for any other sizes net including in the Table, standard weights as per the manufacturers catalogue shall be used. The lengths shall be measured to the nearest ten cms. Any fractions of less than 5 cms. Being neglect and fractions of 5 cms. Or above taken as 10 cms.

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TABLE

Sections rolled in Metric System

Bars of diameter in mms.	Weight in KG. Per Running Metre
6	0.22
8	0.395
10	0.62
12	0.89
16	1.58
20	2.47
22	3.00
25	3.86
28	4.8
32	6.3
36	8.0
40	9.9

GLAZING

Unless otherwise specified the glazing shall be patent, flattened sheet glass of Indian Make of the best quality, plain or ground. It shall weight 7.5 KG/M<sup>2</sup> (24 czs per Sq. Ft.) upot a size of 60 cm x 60 cm. And above that size 10 KG/M<sup>2</sup> (32 ozs. Per Sq. Ft.) In case of non actinic glass it shall be of Pilkington (India) make of thickness not less than 3 mm. Glazing shall be of quality approved by the Consultant.

PAINTS

Base : These shall be of best white lead, red lead, zinc white prexide of iron of best approved make.

Varnishes:

The oil shall be double boiled linseed oil and shall appear, when filled in a glass tube, pale and clear liquid. It shall be of Godrej, Blundell and Spence or of other quality approved by the Consultants.

Solvents shall be spirits or turpentine.

Pigments : These shall be of selected tints and approved make. Paints should conform to I. S. Specifications.

MARBLE MOSAIC TILES (MM TILES)

The Tiles shall be of 250 mm x 250 mm size with a thickness ranging from about 22 mm to 25 mm. The chips incorporated, in the colored cement must be marble chips, but before they are so incorporated they must be washed free of all dust. The size of the chips shall vary from 6 mm to 3 mm. The top layer of the marble mosaic tile must not be less than 6 mm thick. It must be made compact to vibrating each tile before pressure is applied to the tile.

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The sand cement mix shall be in the preparation of the one part of cement to three part of sand. The mix must be made in a mixing machine. The wetting process during the mix must be thorough in order to ensure maximum strength. The minimum time for curing is 7 days. The colour must be permanent and fast to the action of alkali, light and weather. It should be chemically inert and must the colour contain any adulterant likely to cause such actions. Lead and Zinc Compounds shall not be used. Pigments containing more 2½% water soluble matter, carbon pigments and mineral blacks particularly of the ground ceal type shall not be used. The Architects reserve the right to inspect the Tiles in Factory if they so desire. Tiles shall be of quality approved by the Architect.

**FOR MARBLE TERRACE TILES**

Except for size of Marble chips which in this case shall be 12 mm to 6 mm these tiles shall be mosaic tiles.

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## **SECTION – ‘C’**

### **CONCRETE AND MORTAR**

#### **LIME MORTAR**

Mortar shall be composed of one part of lime and two parts of sand, measured in wooden boxes. The mortar shall be ground in a mechanical mortar mill with 200 turns. The mortar shall be kept moist and protected from sun, rain and dust. Mortar of more than 7 days old shall not be used and before the use the mortar shall be matured for 24 hours. Lime mortar should conform to I. S. Specifications.

Surkhi shall be added without any extra as instructed by the Architects.

#### **CEMENT CONCRETE : FOR FOUNDATION WORKS**

All cement concrete for foundations shall have the mix as specified on the Drawings or as per instructions in writing by the Architects. If hand mixed, the several materials shall be accurately gauged using 10% extra cement and thoroughly mixed on a platform by being turned over atleast, twice dry and twice wet. Water shall be added gradually and no more shall be used than necessary to sufficiently wet the materials. It should be deposited gently in the trenches in horizontal layers of not more than 15 cm. Thick and gently leveled by suitable rammers. No more concrete shall be mixed than can be used within half an hour. After laying, the concrete shall be kept wet for the requiring curing period. Rate shall be per Cubic Metre.

Note : Hand mixing will only be allowed if the total quantity of work is very small.

Concrete should conform to I. S. Specifications.

#### **PROPORTIONS**

The various mixes of concrete, in the various parts of the work will be specified on the Drawings and shall be accurately followed. The quantity of water used shall be the minimum required for workability and shall be varied as required to suit humidity and the moisture content of the aggregate and sand and to produce concrete having the specified slump.

#### **DESIGN OF CONCRETE MIXES**

If the concreting is to be done either on volumetric basis or by weight batching, then in such cases the contractor has to submit the design mix along-with the test results for such specified concrete mix, to the approval of the Architects. However, for normal curing such test results shall be submitted after a period of 7 days curing and 28 days curing, after casting of concrete cubes, as specified for design mix. Testing of concrete cubes shall be done in Laboratories approved by the Architects. If a particular or specified design mix does not give satisfactory results then the contractor has to make the variations in design mix in such a way that the design mix gives the desired results for that specified mix, subject to the approval of the Architects to such results. If design mix is to be used then it must be got approved by the Architects prior using the same in item.

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## MANIPULATION AND WORKMANSHIP

Mixing : An approved mechanical batch mixer shall be used. The mixer and mixing platform shall be suitably protected from wind and rain. The aggregate and cement shall be first mixed dry and then after addition of water. Mixing shall be carried out until the concrete is of even colour and consistent throughout. The mixing of concrete of different mixes shall be allowed to be carried out at one time, by the same mixer.

## REINFORCED CONCRETE

Aggregates for reinforced concrete shall be of stone metal chip, clean and angular approved by the Architects, shingle will not be allowed.

Cement concrete for reinforced concrete work and / or plain cement concrete work, unless otherwise specified, shall consist of M-80, M-100, M-200, M-250, M-300, M-350, M-400 or such mixed as the Architects will direct from time to time during construction work.

## MIXING

The aggregate and sand shall be washed of all dust and silt before using. The materials shall be accurately measured and mixing as per approved design mix by Consultants in a machine thoroughly or as on volumetric basis. The concrete shall have a specific slump.

When proportions are specifically required by weight, they shall be mixed so.

## CONSISTENCY

The consistency of the concrete shall be determined at all times by means of a slump cone test, the slump for concrete in the various members, shall not exceed the following :

- (1) Precast Work .. 35 mm slump.
- (2) Footings and Reads .. 30 mm slump.
- (3) Columns .. 50 mm slump.
- (4) Walls (R.C.C.) .. 50 mm slump.
- (5) Floor Slab .. 40 mm slump.
- (6) Beams and Lintels .. 50 mm slump.

The slump tests shall be carried out as per I. S. I. Care should be taken to ensure that a representative sample is taken.

## STRENGTH

Ordinary concrete mix on volumetric basis shall have the crushing strength as per IS-456 Specifications. Ordinary concrete mix shall have minimum cement bags per cu. M. as given below :

No.	Concrete Grade	Cement Mix	Minimum Cement Bags / M <sup>3</sup>
1	M – 75	1 : 4 : 8	3.40 Bags
2	M – 100	1 : 3 : 6	4.40 Bags
3	M – 150	1 : 2 : 4	6.27 Bags
4	M – 200	1 : 1½ : 3	7.10 Bags
5	M – 250	1 : 1 : 2	7.50 Bags

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### TEST

The contractor shall as and when directed by the Architects cast 15 cm (6") cubes of the concrete of approved design mix being used in the work and after curing shall get then tested. The cost of all testing shall be borne by the contractor. Forms for such test cubes shall be provided by the contractor. The test results for such concrete cubes shall be submitted by contractor to the Architect for approval. Concrete mix for shell roof shall be controlled concrete M-200 or as specified. The design mix shall be approved and tested from recognized laboratory.

### PLACING OF CONCRETE

Concrete shall be placed in moulds within 15 minutes of its being mixed with water. Mechanical vibrator shall be used while laying concrete for walls, slabs, columns and means, footings etc. for carrying up concrete, a mechanical power driven hoist shall be used, if so required by the Consultants.

### FORM WORK (GENERAL)

Shuttering shall be either of hard wooden planks 37 mm. thick as Plywood shuttering of 30 mm. thickness or of steel plates stiffened by angle iron and all approved by Architects. A shuttering work shall be supported on battens, ----- and wedges and properly cross braced together so as to make the from work sufficiently rigid, strong and stable to support the wet concrete and workers. It should not yield on working and laying concrete. Beams for centering shall be carried and supported on the floor P.C.C. with double wedges underneath and supported at intervals with props.

Props shall be either TW ballies of sufficient strength and length or A. C. props. Ballies props shall rest on double wedges placed over wooden sole planks of minimum 37 mm thickness so as to facilitate tightening and casing of the centering and shuttering work.

Shuttering shall be kept clear of wall bearing or column bearing and made to rest on cross beams or battens. The shuttering shall have smooth and even surface and its joints shall be close tight and shall not permit leakage of cement slurry or water. Foam oil shall be applied to the inner faces of shuttering work which will be coming in contact with concrete work, to prevent adherence of concrete to shuttering materials.

All shuttering and centering work shall be removed as specified. All shuttering and centering work shall be removed slowly and carefully without any jerks or vibrations in such a way that no part of concrete is damaged and disturbed.

The contractor shall supply all necessary centering (false work) including planks, props, bracing, nails etc. And all necessary labour, plant and machinery etc. for fixing centering of accurate size and shape for the various members of concrete as also the labour and tools required for striking the same.

Forms shall be carefully examined to see that they are truly vertical and horizontal and the joints properly closed. When form are to be roused they should be, carefully examined before such reuse, properly aligned and have all open joints repaired and coated with a separator.

Centering and props for the various R.C.C. members shall be fixed in a workman like manner and shall be approved by the Consultants. They shall be of such sizes as the Consultants think fit and proper. The centering shall be removed only after permission to that effect has been obtained form the Consultants. Props shall not be less than 75 mm dia on top and shall be supported on wedges and planks. Planks shall not be less than 25 mm. thick. The centering planks, runners and props shall of such dimensions as are required by static calculations to be approved by the Consultants. For special type of work complete drawings showing arrangement of centering shall be submitted, if demanded by the Consultants.

The area of form work coming in contact with specified concrete work shall only be measured for payments, if there is separate item for providing form work for concrete work, in the Tender.

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The minimum period for keeping the centering in position for curing, after laying the materials, shall be as follows :

Name of Work	Centering	Watering
Slab in general	10 Days	Water shall be compounded on slabs by making 1mX1m Ponds by bunds of cement mortar. Column shall be wrap-ped with a jute cloth. Beams shall also be so covered with Jute cloth. to be kept wet for a minimum period of 20 days
Single Slab	Upto the Of the storey above	
Underside of Beams and	20 Days	
Lintel Bottoms		
Vault Roof Slab Flat Slab	20 Days	
Side of the Beams	2 Days	
Side of the Column	2 Days	
Side of the Lintels	2 Days	
Coping Sides	2 Days	
Shell Roof	As per the instructions given in Drawing.	

COVER TO REINFORCEMENT

Cover to reinforcement shall be in accordance with that indicated on the R. C. C. Drawings and shall be maintained by the use of precast cubes or cover blocks, of the size equal to the cover specified, or by mild steel bar spacers (equal in diameter to the cover specified) These will not be measured and paid.

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### BENDING AND PLACING REINFORCEMENT

The reinforcement shall be accurately bent cold to the shapes shown on the R.C.C. Drawings and all bonds shall conform to the details supplied. The reinforcement shall be built up exactly as show on the detailed drawing and supported so as to give correct cover. All inter sections of bars shall be secured tightly with binding wires. Stirrups shall be secured tightly to the bars which they embrace and shall be kept from the faces of the concrete at the distance shown on the Drawings.

The iron bars shall be free from scale or rust and shall be properly brushed and not painted. They shall be of diameters brushed and not painted. They shall be of diameters specified and bent to shapes as dimensioned and placed in position shown on the plans and ends shall be hooked, the hook being eight times the diameter of the bars. No splicing shall be allowed in short members.

Where there is splicing, the bars shall overlap for tensions and for compression as per Drawings but excluding the hooked ends. They shall be bound together by binding wires. The reinforcement shall be approved and measured by the Consultants or their Engineers before concreting is started. The concrete shall be worked round the reinforcement and well vibrated. For consolidation of concrete in columns, beams, walls and slabs, mechanical immersion vibrators shall be used. Where concrete is measured excluding steel, only that steel actually in concrete shall be measured, but no allowance shall be made for wastage. Binding wire, laps or welding if any, steel used for maintaining reinforcement in position shall not be measured. Laps other than those shown on Drawings will not be measured and paid separately, but contractor has to provide the laps as shown in Drawing. The rate shall be inclusive of all.

### EXPANSION JOINTS

Expansion joints shall be provided in such manner as shall be indicated on the Architect's Drawings and as per instructions. Expansion joints shall be filled up with shalitek sheets or as indicated to the Drawings, or otherwise treated as per specifications or instructions.

### COPING AND SILLS

Reinforced or plain cement concrete copings and sills shall be of the full thickness of the walls or will be as of specified thickness and width and of specified concrete mix and finished and moulded as per Design and Drawings. They shall be reinforced as per Design. While casting the coping, the concrete shall be vibrated properly. Concrete mix shall be as specified on Drawing.

### LINTELS

These shall be of dimensions as shown on the Drawings and shall have a minimum bearing equal to depth of the lintels on both sides of the opening unless otherwise directed. The centering shall not be nailed to the door or window frames. The concrete mix shall be as specified on Drawing.

### BEAMS AND SLABS

The cover below the lowest bar in beams shall be 25 mm or the diameter of the thickest bar whichever is more and cover for bars in slab shall be 20 mm. or as shown on Drawings. The work of filling in beams and slabs shall be completed in one operations as far as possible. If concreting is to be stopped permission shall be obtained from the Architects and it shall be stopped at the center of the beam or wall as the case may be, for the slabs in a vertical plane and at right angles to the direction of beams, or as directed.

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After the forms are struck, the surface shall be properly picked and hacked immediately and a mixture of sand and cement dashed against the surface making the surface true in one plane. The surface shall then be plastered with sand and cement mortar and finally finished smooth with a fine coating or neeru. The visible edges of beams and columns shall not be knife sharp but shall be finished as per Design and cornices, if any at the junction of slabs and beam or wall shall also be finished as per Design. The surface then shall receive two coats of white wash.

The rate for all R.C.C. members shall be exclusive of steel as reinforcement and finishing unless otherwise specified.

Columns shall be measured in Cubic Meters of the actual work done between the slabs. All beams shall be measured between the slabs, beams being measured between columns. Slabs shall be measured in between columns. Slabs shall be measured in Square Metre as of specified thickness, and of specified mix or M3 as shown on the Drawings.

Chajjas and canopies shall be measured in Sq. Metre, clear of walls and of specified thickness and of specified concrete mix. If the fascia form or a drop or pardi has been provided, it shall be measured in Square Metre separately and paid under pardi item.

Lintels shall be measured in Cubic Metres for actual length provided.

The sizes of all R.C.C. members shall be measured exclusive of finishing and as per dimensions on Drawings.

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**SECTION – D**  
**STONE MASONRY**  
**RUBBLE AND CEMENT MORTAR MASONRY**

All stones shall be laid on their natural beds and properly bonded in the work. No hollow spaces shall be left.

Inter spaces shall be filled with mortar and stone chips driven in and not with only mortar. Work shall be in plumb and joints broken vertically. Bond stones not less than the width of the wall or 68 cms. In length shall be provided 1.5 M. c/c staggered in every course. The height of the courses shall not exceed 38 cms. Work shall be well watered thrice a day for 20 days after completion. When the work is stopped for the day or on holidays or when upto the full height, tables shall be formed on holidays or when upto the full height, tables shall be formed on the surface and kept full of water. At least 35% mortar shall be used in walls.

The measurement shall be the actual cubical contents of the masonry after deducting all openings, beams, columns, etc. as is applicable No deduction will, however, be made in the cubical contents for Khandki facing. No extra charges shall be allowed for bond stones.

Cement mortar to be used shall be as specified in item.

**DRY RUBBLE PACKING (PITCHING) OR SOLING**

It shall be 23 cms, thick unless otherwise specified and shall be hand packed with stones from approved quarries and the interstices filled in tight with small chips and hard murum and watered and rammed hard. The work shall be measured in Square Metre as per work executed.

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## **SECTION – E** **BRICK MASONRY**

### **Cement Mortar**

Cement mortar shall be normally composed of one part of cement to six parts of sand unless otherwise specified, the ingredients shall be accurately gauged by measure and shall be well and evenly mixed together dry on a platform, care being taken not to add more water than is required. No mortar that has begun to set shall be used.

Where a different preparation is specified that shall be the proportion used in that particular place. Contractor at his own expenses shall be required to test the cement mortar, if found necessary and the test result shall be submitted to the Architects for approval.

### **Brick Work**

Brick work is to be carried out with all necessary setbacks, projections, cuttings footings etc. which are shown on Drawings and in strict conformity with them.

All uneven, irregular and bad brick work shall be demolished if deemed necessary by the Architects and rebuilt at contractor's risk and cost.

All joints of brick work to be plastered or pointed, shall be properly raked out to a depth of 12 mm. as the work proceeds. In no case, mortar which has set shall be removed from joints by hammering, chiseling or in a manner as to cause no damage to the bricks, but shall be raked out with a suitable metal tool before the mortar sets.

Every brick shall be thoroughly soaked in water before using, till bubbles cease to come up. No broken bricks shall be used except as closers. The courses shall be truly horizontal and the work strictly in plumb, joints shall be broken vertically and they shall not exceed 12 mm. in thickness. The brick work shall not be raised by more than 10 courses per day. Tables shall be formed at every eleventh course and kept full of water. The bricks shall be laid in English bond.

In bricks arches or other circular work, the brick shall be shaped to slope joints radiating correctly to the centre, from front to back of walls and not more than 12 mm. thick. The face bricks shall be of uniform colour and have sharp arises.

The work shall be well watered three times a day for 10 days and afterwards twice a day 21 days. The brick to be used in work shall conform to I. S. specifications. Good quality locally available bricks can also be used if approved by the Architects.

The work shall be protected during the rains as directed.

The rate of brick work shall be inclusive of all necessary scaffolding, centering, watering and cutting of bricks for decorative work, arches, corbels, projections, etc.

The measurement of work shall be the product of length, height and thickness. Deduction shall be made for all openings, lintels, beams and columns occupying the full thickness of the walls. The work shall be priced per unit of one Cubic Metre or Square Metre as given in Schedule of quantities.

### **Brick Partitions (Reinforced)**

Brick partitions shall be of 1/2 brick width or brick on edge when so specified. Partitions of 1/2 brick thickness shall have one R.C.C. M-150 bonding layer, 2 layers high and of full width. It shall be reinforced with 4 numbers of 6 mm M.S. bars with stirrups of 6 mm dia M.S. Bars @ 200 mm c/c. Cement mortar used for masonry will be 1 : 6, or as specified and when there are doors in such partitions the bend will be on top of such door.

For brick on edge partitions separate specifications will be indicated in the job description, in schedule of quantities.

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1/2" brick partitions will be measured in Sq. Mtr. without plaster, No allowance shall be made for concrete band or shuttering. Reinforcement will be measured and paid separately, under M.S. reinforcement item for R.C.C. pardi.

Fairface

All 115 mm, 225 mm, 350 mm and 450 mm. walls will be built fairfaced on one side only. All walls of greater thickness shall be built without exception with fairface to both sides.

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## SECTION F

### PLASTER

#### Cement Plaster (Neeru)

Cement shall be thoroughly mixed dry with sand in the proportion of one of four or as specified. Water shall then be added gradually to make the mixture homogeneous. No more cement mortar shall be mixed than that can be used within half an hour. The joints between the stones or bricks will be raked out to a depth of 12 mm. and the surfaces shall be thoroughly watered and the mixture of sand and cement applied evenly on all surfaces to be plastered. The surface shall be finished off with a thin layer of neeru. The plaster work shall be kept thoroughly wet for a period of seven days. The item shall be paid per Sq. Metre. Local sand if approved by the Architect can also be used for plaster work.

The rate shall include jambs, coves at the junction of walls, ceiling and beams and all corners. Deductions for openings, doors, windows, etc. shall be made as per I. S. specifications.

#### Sand faced cement plaster

All surfaces shall be cleaned of all dust and dirt and the brick work thoroughly watered. The backing coat shall be 12 mm. thick of cement plaster in the ratio of 1:4 and a finishing coat 6 mm. thick consisting of grey cement and sand shall be applied on the Surface. After curing this first coat sufficiently, a finishing coat 6 mm. thick consisting of grey cement and sand of approved quality in c.m. mix (1:3) shall be applied and finished to desired texture. Local sand if approved by the Architect can also be used for sand faced cement plaster. The average plaster thickness shall be 16mm to 20mm.

The mode of measurement shall be the same as per cement plaster, and deductions shall be made as per I. S. specifications.

#### Cement Pointing

Mortar shall be raked out of the joint to a depth of 12 mm. Dust shall be brushed out of the joints and the wall well wetted. Pointing shall be done with cement and sand mixed in equal proportion or as per proportion specified. The joints of the pointed work shall be neatly finished as directed and shall be kept wet till the cementing material has set and become hard. Curing shall continue for a minimum period of seven days.

The item will be paid per Square Metre. Deductions shall be made as per I. S. specifications. Local sand can be used for this work if approved by the Architect.

#### Rough Cast Cement Plaster

All joints shall be raked out as for cement plaster. Cement shall be thoroughly mixed dry with sand and gravel to pass through 6 mm (1/4) mesh but not through 1.5 mm. (1/16") in the proportion of 1 part of cement, 2 parts of sand and 1 part of gravel. Water shall be gradually added to make the mixture homogeneous. No. more mixture shall be prepared that what cement be used within half an hour. The mixture shall be dashed against the surface to a thickness of 20 mm. and finished level. The mode of measurement shall be the same as for cement plaster, curing shall continue for a minimum period of seven days. Deductions shall be made as per I. S. specifications. Average thickness of plaster work shall be 20 mm-

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### Terraco Finishing ( Spray Plaster )

The works of finishing to interior building surfaces shall be done by Spray Plaster of Terraco. It is a ready made mix plaster which replaces neeru finishing, putty primer and also reduces paint consumption.

The spray plaster should be applied on dry surfaces only. Before spray plastering, the work of common type of plastering should be done without neeru and left the surfaces for complete drying. When surfaces where spray plastering is to be applied became dry, when only the spray plaster shall be applied on cement plaster likewise the application before painting the wall. before applying the spray plaster, the dust, dirt and foreign matter should be brushed away. So also any ridges and form oil should be removed suitably. The work of spray plastering shall be done in two coats. However the work of finishing should be done up to the satisfaction of the Architects.

### SECTION - MODE OF MEASUREMENT

In general the mode of measurements shall be as per standard practice laid down by the I.S:1200-1964 read with latest amendments, if any, except where it differs from that stated in the specifications, in which case, the mode of measurements as mentioned in the specifications shall prevail.

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## SECTION – G

### TIMBER WORK

#### Carpentry Work

Timber shall be properly planned in a workman like manner. Joints shall be true and fit properly and of the kind directed by the Architect. All timber when embedded in masonry shall be coated with two coats of oil paint two days prior to erecting. All exposed faces of the timber shall receive primer coat of red or yellow earth mixed with water. The wood surfaces shall be cleaned properly before applying oil paint.

If directed all timber shall be treated against white ants by application of a specified patent chemical.

The rate of wood work shall include the cost of sawing, planning, jointing, framing labour and materials for hoisting and fixing in position and all workmanship for fixing and supply of all straps, bolts, nails, spikes, keys, wedges, pins, screws, etc. necessary for the framing and fixing. Joints and portions inserted in the masonry shall be measured.

The work for doors, windows, ventilators, cupboards, TW partitions shall be measured in Square Metre and outside to outside of frame work including shutters, panels, glazing etc.

all teak wood work in curved pieces shall be measured as the smallest piece cut of which the work may be cut.

#### Joinary

Door and window frames shall be of 125 mm x 75 mm. or 150 mm x 65 mm. size or of such dimensions as directed by the Architect. They shall be properly framed and mortised and tenoned together and set in masonry by means of iron hold fasts. The visible surfaces shall be smooth and even. The parts hidden in the masonry shall be well oil painted. The frames shall be rebated 12 mm. on one side (If the shutters are on one side) and the full thickness of the shutter are on one side) and the full thickness of the shutter shall be moulded as per design on the other side or the frame shall be rebated on both sides. During the progress of the works, the frames shall be protected from injury by necessary boxing.

Hardware and iron mongery shall be fixed to the shutters in a workman like manner to the satisfaction of the Architect. The rates of the various items of joinery work shall include the cost and fixing of the fixtures and fastenings.

#### Panelled Shutter Door

The frame and shutters shall be of well seasoned teak as specified. The styles and rails shall be of thickness and width as specified, moulded and morticed together in a workman like manner. Styles and top, bottom lock and frieze rails shall be of widths and moulding as per drawings. Each panel shall be of thickness as specified. The measurement shall be in Square Metres from out side to outside of frames and shall be paid per Sq. Metre. The rate shall include cost of frames, shutters and hold fasts fittings, painting, polishing etc. as directed.

#### Flush Door Shutter

These shall be of 30 mm. thick or as directed by the Architect with teak or other veneer on both faces or as directed and shall be of approved make.

The work shall be measured in Square Metre from out side of frames and shall be paid per Square Metre. The rate shall include cost of frame, shutters and hold fasts fittings, painting, polishing etc. as directed.

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### Glazed Doors and Shutters

These shall be similar to paneled shutters and as shown on Drawings. Such parts as are directed shall be glazed with sheet or ground glass weighing 7.5 Kg./m<sup>2</sup> or non actinic glass as specified. Styles and rails in the glazed shutters shall be rebated 12 mm. to receive the glass. Such bars shall be moulded and rebated and mitered. Glass panes shall be fixed by means of Teak beads and putty.

The work shall be measured in the same way as per paneled doors. The price per Sq. Metre shall include supply and fixing of glazing and beads, except where otherwise stated in the schedule of quantities. The rate shall include cost of frame shutters and hold fast, painting etc.

### Fixed Louvers with Frames

Fixed louvres shall be 200 mm wide or as shown on Drawing and of 7.5 kg/M<sup>2</sup> of glass of approved quality, the slope shall be such as shall not allow direct vision in a horizontal direction, or as specified on Drawings. The work shall be measured in Square Metre inclusive of frames and hold fasts and shall be measured from outside to outside of frames and shall be paid per Square Metre.

### Timber and Glazed Partitions

Partitions shall be partly paneled and partly glazed as specified on Drawings. Teak wood members of the partitions shall be as specified. They shall be fixed to the Door by means of iron clamps rigidly fixed to the floor slab and the work shall be carried out and completed as per Drawings supplied by the Architect. The upper portion shall be glazed with 4 mm. thick plain glass as per Drawings. The material for panels and glazing shall be as specified in Drawings.

The work shall be measured in Square metre and shall be paid in Unit or Square Metre.

### Hardware for Doors and Windows

These shall be of the good quality and as approved by the Architect, for the items concerned and shall be secured in position with brass screw. No screw shall be driven by hammer or similar tool. All cuttings into the work shall be of required shape and size and no over cutting is allowed. Contractor has to supply the samples of various fixtures and fittings to the Architect for approval before fixing them to particular items. All these samples shall be exhibited in Architect's office or site office. Hardware will not be paid separately unless otherwise specified.

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## SECTION – H

### M. S. DOORS AND WINDOWS

Steel Doors and Windows shall be with standard sections and sizes as mentioned on the Drawings. They shall be of approved make. They shall comply with T. S. 1038 : 1959.

- (i) Windows and ventilators shall be of rolled mild steel sections 25 mm wide (1.5 Kg/M ) and doors of 35 mm. wide sections (Approx. 2.55 Kg/M ) or as specified in Drawings.
- (ii) The frames shall be in one plane, joints shall be mitred and welded on butt welding machines. Glazing bars shall be tennoned and rivetted. The inter section of T bars should have 'Fenestre' Joints.
- (iii) The sections shall be given anti-rust treatment (by pickling) before shop coat of paint is applies. Final coats of paints shall be as specified. Glass panels to Doors and Windows shall be fixed by means of teak and bends putty, glazing to sky light shall be fixed as per Manufacturer's specifications. These shall be measured from outside to outside and shall be paid per Square Metre. The rate shall include storing, handling and fixing in position.

#### *Wrought Iron and Steel Work*

All W. I. and steel work shall comply with specifications and design. The manufacturer shall be as approved by the Architect.

Grill work and grill gates shall be as per the Architect's Design.

Collapsible gates will be of mid bar type, made cut of 20 mm channels and will be top hung with ball bearings and will have locking arrangements as specified.

Roller shutter will be of approved make, the rolling slates being in one place. They shall be provided with a cylindrical hood at top to enclose the shutter when it is opened.

Weld mesh grills and grill gates shall be as per design. Weld mesh used therein shall be as specified. The steel enclosing frame shall consist of such sections as are specified in the Drawing. All joints shall be properly welded.

All the W. I. and steel work, mentioned in this section shall receive a shop coat of red lead paint before erection on site.

In the case of grill work, grill gated, collapsible gates, or welded mesh grill and railing, the work shall be measured in Square Metre for supply and fixing and shall be paid per Square Metre including painting, fittings etc.

Rolling shutter shall be measured as per openings provided in masonry work for fixing the same.

In the case of steel work in trusses, purlins and other fabricated work, the work shall be measured by weight of actual work done and shall be paid per Tonne. Detailed specifications specified on Drawings or as per directions from Architects. The rate shall be inclusive of one coat of primary red oxide 'paint.

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## SECTION – I

### PAINTING

#### Painting

Where the term "Paint" or "Painting" or "to be Painted" or "Colour Wash" or "White Wash" etc. is used in specifications or Bill of quantities it includes scrapping, cleaning and painting or colour washing or distempering or white washing as the case may be, all to the satisfaction of the Architects.

#### Priming

Neither any shop coat of paint herein specified for any priming coat shall be considered as a coat of paint for the purpose of these specifications.

#### Putty

Putty shall be composed of best quality of whiting mixed with double boiled linseed oil, properly kneaded to workable consistency.

#### Oil Paint

Surfaces to be painted shall be dry, free from dust and dirt and rubbed smooth by means of sand paper or pumice stone to the satisfaction of the Architect.

The paint shall be mixed in proper proportion as per manufacturer's specifications and driers and pigments shall be carefully added as and when required. Alternatively mixed paints of approved quality and shade may be used.

The primary coat shall be of white zinc and double boiled oil only and shall be applied evenly. After the primary coat is applied and perfectly dried, all holes, cracks, etc. shall be filled in with putty and the surfaces are prepared. Then a second coat of paint with the addition of the pigment shall be carefully applied as and when required.

When the work is to be varnished, the varnish shall be best varnish mixed with turpentine if required & evenly applied in required number of coats. The rate shall be per Square Metre and deductions shall be as per I. S. specifications.

#### Oil Bound Distemper

All plaster surface shall be thoroughly cleaned and shall receive 3 coats as specified below

First, a coat of prime shall be applied, after the primary coat of white lime wash is properly scraped off, the second and the third coat shall be applied with oil bound distemper of approved tint and quality, mixed with water as per Manufacturer's specifications.

If after those operations, the work is not done to the satisfaction of the Architects then one more coat shall be applied without extra cost till the work is executed to the satisfaction of the Architects.

#### Dry Distemper Wash/ Colour Wash

All plastered surfaces shall be thoroughly cleaned and shall receive coats of dry distemper / colour wash. At first, white lime wash shall be evenly applied and scraped off when dry. A first coat of prime size shall then be applied. Second and third coats shall be of dry distemper or of colour wash of approved quality in mixed with water as per manufacturer's specifications.

In case the work is not done to the Architect's satisfaction, one or more coats shall be applied without extra cost until the work is executed to the satisfaction of the Architects.

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All the painting work shall be measured in Square Metre for actual work done including all soffits, jambs, sills, walls, plastering surfaces, etc. and shall be paid per Sq. Metre. All deductions shall be as per I. S. specifications.

#### French Polish

The wood work shall be first cleaned and scraped thoroughly with glass paper. It will then be painted with a 'filter' composed of whitening and methylated spirit and against clean with glass paper. A thin coat of french polish shall be applied until the finishing is done to the satisfaction of the Architect.

#### Wax Polish

The work shall be done in the same way as for french polish with the exception that wax polish will be used instead of french polish.

The oil paint and french and wax polish work will be measured in Square Metre from outside of the framing as follows :

- |  |      |                                      |
|--|------|--------------------------------------|
| (a) Fully glazed partition<br>Window or Door | <br> | Square Area of<br>1 face only.       |
| (b) Half panelled and<br>half glazed.        | <br> | 1 1/2 times the Area<br>of one face. |
| (c) Fully panelled                           | <br> | Twice the Area of<br>one face.       |

Note: The work mentioned in this section shall be measured separately only in case it is distinctly so specified in the schedule of quantities.

## SECTION - J

### SPECIFICATION FOR VARIOUS TYPES OF FLOORING, ROUGH SHAHABAD FLOORING MACHINE CUT

Rough shahbad stones of 35 mm. thickness shall only be allowed for use in flooring. The stones shall be hard, sound, free from veins, cracks, etc.

The stones shall be truly rectangular in shape after the edges are cut by machine. Floor shall have a uniform joint of not more than 3 mm.

The sub-floor or base shall be cleaned of all dirt and loose material and well wetted without forming any pools of water on the surface. Lime mortar (1:3) shall be prepared in the mixing mill on pan. It shall be laid and compacted to a reasonably true plain surface by screed battens to the required level. The cement float will be spread over the area and the stone shall laid in lime and level. The stones after placing in the position shall be gently dashed against the adjoining stones. This will fill the voids in the joints. Any surplus slurry on the joint shall be wiped clean before its setting. The surface shall be kept wet for a period of 14 (Fourteen) days.

#### Kota Flooring / Kadappa

Stones slabs of kota tiles shall be hard, sound, durable, resistant to wear with a thickness of 25 mm. to 30 mm. The stone shall be machine polished but dressed with hand tools and shall be of uniform colour and texture.

The tiles will be laid on cement mortar (1:6) with 2.50 cms. thick cement paste. Care shall be taken while fixing the tiles, so as not to leave any hollows in floor and joints. Where necessary, the tiles will be laid with necessary slopes for the even flow of water. All the sealing of the cement slurry or mortar shall be cleaned immediately. The edges of the adjoining tiles shall in one plane. The curing shall be done as per instructions of site in charge.

#### Kota Dado / Kadappa

The tiles to be used shall be used as described in the specifications of kota flooring. The cement plaster of about 20 mm in C. M. (1:4) shall be applied to the part of the wall where dado is to be fixed first.

Before fixing, the back of the stone slabs, shall be covered with a paste of cement. The slab shall be pressed on the wall and gently tapped by wooden mallet to bring it in line and level. The joints shall not exceed 1.5 mm. Final polishing may be done by rubbing. The top of dado shall be jointed neatly with the plaster above as directed. Material brought for work shall confirm to the approved samples.

Cement mortar (1:6) shall be evenly and smoothly spread over the base with the help of screed pattern to proper level or 'slope'. The thickness of the bedding shall not be less than 12 mm or more than 20 mm. in any one plane. The tiles shall be laid on the bedding when it is still plastic but has become sufficiently stiff to offer a fairly firm cushion for the tiles.

The tiles before use shall be soaked in water for 2 (Two) hours. Cement grout of required consistency shall be read over the bedding mortar for an area that can be covered within half an hour. The edges of the tiles shall be smeared with neat white cement slurry and fixed in the grout one after the other, each tile being well pressed and gently tapped with a wooden mallet. There shall be no hollows in beds and joints. The joints shall not exceed 1.50 mm. The joints shall be grouted with a slurry of white cement. The surplus cement grout and other dirt shall be cleaned at the end of days work.

The surface shall be kept wet continuously for a period of 14 days.

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### Ceramic Tile Dado Work

Materials used will be the same as that used for ceramic tile flooring.

Cement plaster in C. M. (1:6) shall be applied to the part of the wall where dado work is to be done. The thickness of the bedding shall not be less than 12 mm or more than 20 mm in any one place.

The tiles before use shall be soaked in water for 2 hours. Tiles shall be fixed when the cushioning mortar is still plastic and before it gets very stiff, the back of tiles shall be covered with a thin layer of neat cement paste and the tile is pressed in the mortar and gently tapped by wooden mallet. The joints shall be filled with white cement slurry. The joints shall not exceed 1.5 mm.

The surplus cement grout shall be cleaned before it sets. The surface shall be kept wet for a period of 14 days.

### M. M. Terrazo Flooring

Tile samples shall be got approved before hand. Materials brought for work shall confirm to the approved samples.

Lime mortar (1:6) shall be evenly and smoothly spread over the base with the help of screed battens to proper level. The thickness of the bedding shall not be less than 12 mm or more than 20 mm. in any one place. The tiles will be laid on a cement float. The joints of the tiles shall be filled with matching colored cement slurry. Then the floor shall be kept wet for a period of 14 days.

Polishing will be done in three coats by rotary machine, so as to get a smooth, clean and polished surface.

### Sparktect Tiles

The sparktect tiles shall be used for flooring. These tiles shall be fitted likewise Mosaic, Kota or Marble on the flooring.

These tiles shall be fitted in wall also as per the fitting procedure. The sparktect tiles need not to be soaked in the water before its use like glazed tiles.

### Marble / Granite / Dholpur cladding

Providing fixing marble / granite / dholpur stone on wall with single coat plaster in plumb line made rough to adhere the plaster dabing on the stone back. Fixing the stone tiles or slabs with use of the material like ferrafix etc. with filling the joints with the similar colour cement material with curing complete.

### Marble Flooring and Lining

The marble shall be as approved by the Architect.

The exposed surface of marble shall be polished or otherwise as specified and shall be free from scratches and other defects.

The marble shall be machine cut, machine polished (if specified) free from cracks or flakes and uniform in colour. The edges shall be straight and square.

The marble shall be bedded in lime / cement sand mortar with cement floated. The joints shall be laid with fine invisible joint or otherwise as instructed.

The contractor shall also take care to match grains of the marble, if instructed.

Marble for treads and risers shall be in one piece upto 5 ' length. The thickness shall be as per the Architect's instructions.

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Marble linings to walls, columns and the like shall be fixed with copper clamps and hooks. The clamp shall be 25 x 50 x 100 mm. girth, one end turned down and grouted into mortice in marble and other and built into wall, mortices shall be carefully cut and thoroughly grouted.

Whenever the marble is exposed to weather, the vertical faces must be well bonded to the base by applying glue and aggregate as per the Architect's instructions.

The exposed edges and moldings shall be protected by means of timber nosing.

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## SECTION – K

### DRAINAGE, SEWAGE, WATER SUPPLY AND STORM WATER DRAINS

#### DRAINS

The contractor will be wholly responsible for any extra excavation done by him below the required levels as directed. Extra width of excavation will be required at the place of joints, for the facility of work of caulking the joints. This extra excavation in width and depth will not be paid in any item.

Bailling out of water should be properly carried out by the contractor at his own cost. Electric, diesel pumps or manual labour can be used for the purpose.

The final bed of the foundation, after the excavation is completed shall be got approved by the contractor from the Architect before the concrete is laid.

#### Providing and Laying C.I. Pipes

- a) All the pipes to be taken into use shall be cleaned and brushed clear off rust and painted at both spigot and socket ends.
- b) Before the pipes are lowered and laid in trenches the contractor shall see that the bedding is plain or the surface is brought to uniform grade and leveled with the help of cross sight rails and bonding staff and approved in advanced by at least three days by the Architects.
- c) The contractor shall provide and fix and maintain cross sight rails and boning staff wherever required until the time of completion without any extra claim for cost etc. and which shall be considered inclusive in the rates for excavation etc.
- d) Temporary bench marks shall be provided by the contractor if called upon at a minimum distance of every 30 Mt. without any claim for extra cost. The bench marks shall be either of stone masonry or mass concrete.
- e) The contractor shall provide for ladders for inspection of works at least two in numbers at the time of inspection for all the trenches of depth greater than 1.20 m .
- f) The pipes shall be lowered by means of ropes or tackle and chain and pulley block as ordered evenly and uniformly and shall be brought to level with well consolidated hard murum or wooden sleeper pieces as ordered.
- g) All the pipes shall be laid with sockets up graded with provision of specials and collars at change of grade and direction.
- h) Materials used for jointing such as hemp etc. shall be got approved in advanced from the Architect.
- i) No jointing operations shall be started unless the grade and levels are approved by the Architects.
- j) The pipes shall be laid in a complete straight line with a center line ranged accurately by means of a string stretched between marked centres by cross sight rails and to deviation will be permissible without the permission of the Architect. For deviation carried out from the marks on the sight rails, the contractor shall relay the pipes as per order without any extra claim.
- k) Under no circumstances the C.I. Pipes and other water mains will be laid on rock bedding without murum cushioning.

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- l) The murum cushioning of a depth of 1/3rd the dia. or 15 cm whichever is greater as specified shall always be provided in all formation with the rate of laying pipe line unless as item for murum bedding is provided for seperately in the tender.
- m) The murum bedding wherever not provided separately shall be of full width of the trench. Murum bedding or suitable selected similar hard stuff will be necessary in rock formation, boulder formation and soft soil such as black cotton soil, but not in murum formation itself.
- n) all obstacles such as electric wires, water and sower main, manholes, natural drainage culverts, storm water drain etc. coming in the way shall carefully be looked after and any damage be prevented to the same. Any work of removing, repairing and re-doing such structure or obstacles in the process of laying pipelines etc. should be carried by the contractors without any claim for extra cost unless previously approved by the Architects.
- o) The contractor shall allow for wastage, breakage in cost of pipes at his own cost whenever the item is for providing & laying pipelines.
- p) Pipes shall be laid in reasonably dry trenches and under no circumstances on slushy murum bedding.
- q) The contractor shall make his own arrangement for obtaining permission for storing and stacking of pipes etc. on the road from the land owners whether it belongs to any other Govt. Dept. or Municipal or private land owner.

#### *LEADING AND JOINTING*

- a) All the jointing work shall be carried out by the contractor after giving a due intimation in advance and in the presence of Architect
- b) Lead joints after having being poured into, shall be chiselled on and caulked to give a tapered shape not a flushed shape.
- c) All jointing material shall be supplied by the contractor in self and shall be of quality duly approved. The rope used for s/s and collar joints shall be of the best quality, clean hemp or spun yarn, free from durt & knots & 1/12" thicker in dia. than the annular space. The habak paint shall be of approved quality.

The annular space round the spigot of every pipe shall be inspected by the help of required tool. If uniform space is left, then only as per insatructions of the Architects the jointing material is to be inserted. The spun yarn shall be dipped in thick slurry of fresh cement and then driven into annular space according to the depth required and made compact by caulking. Uniformity of annular space shall be again checked and then leading should be started. The leading is to be done in the presence of the Architects. After caulking is completed a complete ring of surplus lead shall be cut in the presence of the Architects.

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Effective weight of the lead to be used for each joint in case of s/s joint will be as under :

Dia. of pipe in mm	Weight of lead / joint in Kg.	Appro. Depth, but may be more mm
80	1.814	44.45
100	2.195	44.45
125	2.940	44.45
150	3.447	44.45
200	4.600	50.80
250	6.740	50.80
300	7.330	50.80
350	9.104	63.50
400	11.208	63.50
450	17.010	63.50
500	18.951	63.50
600	22.757	63.50
700	25.719	63.50
750	30.958	63.50

Weights of the lead above are remaining in the joints after removing surplus one after caulking. The lead mentioned is only indicative. However extra claim for use of lead more than that specified will not be allowed, without the permission of the Architects. If lead is less than that specified, a proportionate reduction in the rate will be done. While filling each joint, bucket containing molten lead will be weighed before and after the filling to determine the pour from which the surplus lead removed after caulking will be weighed and deducted to arrive at lead used in the joint. The contractor shall give consumption statement for each joints for verification of consumption of lead.

#### Rubber Gasket Joints.

All the jointing shall be carried out by the contractor after giving an information in advance and in presence of the representatives of the Architects.

Before assembling the joint the spigot of the one pipe and the interior of the socket of the adjacent pipe should be thoroughly cleaned. The gasket should be wiped clean before fixing it in the socket. All care should be taken that the gasket is not twisted while placing it inside the socket, at the same time it fits evenly around the circumstances of the socket. The outer surfaces of the approved quality of the lubricant shall be supplied by the contractor at his own cost. The pipe to be jointed should be supported centrally by the tackle used for laying and balance just clear of the trench of the bottom. The spigot of the pipe should be aligned and entered carefully into the adjacent socket until it makes contact with the gasket.

#### Jointing C. I. Flange Pipes & Specials Including Valves

The flanges of the pipes to be jointed shall be got abutting each other keeping required space for interesting rubber insertion of specified size in such a way that bolt holes of both the ends to be jointed come in line with each other. Rubber insertion not less than 5 mm thick shall be 3 ply. Rubber insertion of specified thickness and of tough, durable and approved quality.

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The nuts and bolts to be used shall be standard steel hexagonal nuts of approved quality & shall be of adequate length. Following are the specified sizes :

<u>Diameter of Specials</u>	<u>Diameter of Bolt</u>
24 cms. diameter	1.5 cms
25 cms to 30 cms diameter	2.0 cms
45 cms & above diameter	2.15 cms

Steel washers should be used with every nut & bolt. Uneven projection due to casting defects of the flanged shall be removed by the filling and made flush with the face of the flange. In exceptional cases if the holes of the two flanges are not concentric then the contractor shall drill the holes wherever necessary. Rubber insertion of specified thickness shall be cut with outside diameter being equal to that of flange without any projection and shall be exactly circular in shape. The concentric circle equal to the inside diameter of the pipe will then be cut so as not to project inside pipe. During cutting care shall be taken not to injure the material of packing.

#### Hydraulic Test

Every part of the pipe line with special must stand the specified hydraulic test to the satisfaction of the Architects. The hydraulic test pump with the required piping etc. shall be arranged for by the Contractor. The contractor shall make his own arrangement for the water require for testing purposes. The testing shall be carried out preferably from the upstream ends down towards the lower grades between lengths of sluice valves or other sectional lengths as permitted by the Architects. This being done with a view to reuse of much of the water from upstream and down stream to the lowest section of the pipe length. The test pressure shall be 50 % in excess of the pipes. For this purpose the working head in the case of ' C ' class pipes shall be taken as 120 mtr. of water. The test pressure shall be maintained for at least a period of half an hour without any drop in pressure and without any further pumping of water into the main after taking precautions that all the enclosed air etc. driven out systematically from the pipeline and all the valve etc. are tested for leakage & made leak proof. For removal of air etc. in absence of suitable Air valves, wash outs etc. the contractor shall drill holes and provide temporary plugs without any claim for extra cost. All the joints at the time of testing shall be wiped absolutely dry with fine dust or powdered bricks to check each and every joint for a light test of seepage or leakage of water for period of at least half an hour.

It shall be responsibility of the contractor to give bone dry pipe joints when subjected to the above test pressure. The hydraulic test shall be made in the presence of Architects or his authorized representative. The results of all the tests shall be properly recorded in a register and be promptly reported. The rate for jointing includes the hydraulic test, together with cost of water etc. The hydraulic test shall be given after providing anchor thrust blocks of concrete of specified proportion on the other side of each bend and against the plugs, caps or blank flanges of the tees as directed. This concrete work shall be paid for separately as per the tendered rate or as per schedule rate, when not provided for in the tender.

If called upon, the Contractor have to maintain the pipe full of water until the time of handing over to the employer.

After the test to the satisfaction of the Architects, the operation of filling the trenches shall be taken in hand only after the written permission of the Architects.

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## *SPECIFICATION FOR*

Providing and Laying and jointing A.C. / P.V.C. Pipes with couplers / C.I.D. Joints / Solvent Cement.

### General

The item pertains to providing & laying A.C. / P.V.C. Pipes of all classes of specified diameter with C.I.D. Joint / Solvent Cement as specified in the item for water supply including collar, socketed bends, socketed tee, socket cross, socket and spigot tapers cap, plug, duck foot bends, excavation, laying pipes and back filling.

This item shall be subject to the general specification.

### Materials

The diameter of C.I. / A.C. / P.V.C. Pipes specified in the wording of the item will be the diameter of the bore of the pipes and the pipes shall conform to I.S. 1536- 1967 or I.S. 1537- 1960. All the fittings (specials) shall conform to I.S. 1538- 1960. The pipes and fitting shall have sockets and or spigot as shown in the Drawings, specified in the special provisions or necessary for the work.

### Excavation

Before starting excavation of the trench, slight rails shall be fixed on the alignment of the pipe line at an interval of 30 m. & at every change of grade & direction at a definite & as far as practicable uniform height above the invert of the pipes the center line being clearly marked on each rail.

The trench for laying the pipes shall be excavated true to lines, levels & grades as shown on the drawings or directed by the Architects with the help of boning rods.

The pipes & fittings shall have sockets and or spigot as shown in the drawing.

The width of the trench shall be at least 30 cm. (about 12 ") wider than the socket of the pipe so as to allow room for ramming the refilled material under and at the sides of the pipe.

The depth shall be such that the pipe shall have a clear cover of at least 75 cm. The trench shall be excavated through all strata met with. When it is necessary and ordered by the Consultant in writing, the sides shall be shored or sloped, otherwise, they shall be as vertical as possible. The rate shall include shoring and provision of slopes.

In case rock is met with, it shall be excavated 15 cm. more than the required depth for providing cushioning by chiselling and line drilling unless blasting is permitted in writing by the Consultant. Special precautions shall have to be taken in blasting as ordered by the Consultant.

Various materials excavated shall be separated and stacked beyond one meter or more from the edge as may be necessary in the opinion of the Consultant to avoid damage to the trench. Any excess excavation shall be filled with suitable material in layers not exceeding 15 cm. watered and thoroughly compacted.

If the trench bed is in soft or made up earth, it shall be compacted fully after watering if necessary. If in rock, the excavation shall be taken down 15 cm. below the bed line and refilled to this level with rammed earth or murum.

The bed shall be even and to the correct grade and line in all cases.

Dewatering of the trench, if required, shall be done without separate claims.

Before lowering the pipes into the trench, hollows shall be cut in the bed, and in a narrow trench, the width of excavation increased opposite the joints to receive the socket and to give adequate room for caulking the load joints.

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The trench shall be barricaded and warning boards fixed. Red lights shall be hung at night time at sufficiently close intervals to indicate the danger and a Chowkidar employed to see that the lights are properly burning. The contractor shall be solely responsible for any accidents due to any default in barricading, sign posting or red lights and shall bear the consequences.

In case of excavation across a road, permission of road authorities shall be obtained for the excavation of the road surface which shall be made good and restored to the original condition by the contractor at his own cost. At all road crossings, the trench shall be excavated only for half the width of the road and pipe laid. The other half shall be excavated only after backfilling over the laid pipe and making it suitable for the traffic. At all road crossing, the pipes shall be laid below the crust of the road.

All pipes, cables, service lines etc. met with during the excavation shall be carefully protected and supported. Any damage done shall be made good by the contractor at his own cost.

### Laying

The pipes shall be laid out along the side of the trench, each pipe in its proper position for laying with an extra pipe after every 20 to allow for cutting if necessary. Whether the trench crosses a road or place where such distribution is in admissible the pipes shall be stacked in heaps at each end, sufficient to fill in the length. Small pipes below 100 mm diameter may be stacked in heaps at every 30 m.

As far as possible, pipes shall be laid straight in rising or falling gradient. It should be possible to empty the pipe readily and completely.

The socket end of the pipe (if it is socketed) shall be facing up hill. All the pipes shall be used in standard lengths as far as possible. Cut lengths may be used only where necessary to make up the exact length. All the pipes shall be first inspected for any damage and cracks. No cracked or damaged pipes shall be used. The pipes shall be thoroughly cleaned with brushes to remove any accumulated stones or soil inside and the inside of socket and the outside of the spigots neatly placed into the sockets for full length and properly supported. The pipes shall be carefully packed underneath so that they shall bear properly supported. The entire pipe length shall be supported on the trench bed evenly throughout.

Any deviation either in plan or elevation of less than  $11\frac{1}{4}^{\circ}$  shall usually be effected by laying the straight pipes round a flat curve, of such radius that the minimum thickness of lead at the face of the socket shall not be reduced below 6 mm (about  $\frac{1}{4}$  ") at any joint. A deviation of about  $2\frac{1}{4}^{\circ}$  at each joint can be erected in this way.

In case of rock bed, murum bedding of 15 cm. shall be provided before laying pipe.

The C. I. D. Joints/ Coupler joints shall be made and paid separately. The P. V. C. Pipes shall be jointed with solvent cement and shall be paid under this item only.

At the end of each day's work, the open end shall be suitably plugged.

### Back Filling

After making the joints, and testing the pipe line to ensure leak proof joints, the trench shall be refilled in layers and manually rammed. The excavated stuff shall be used in filling, such that the filling shall correspond to the original natural layers. The filling shall be kept raised by about 8 cm. per metre of the depth of trench for subsequent settlement. In the case of trench in rock, a bedding and cushioning of murum shall be provided on the sides and top of the pipe. Any surplus excavated stuff shall be disposed off satisfactorily without causing nuisance.

### Item to include

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- (1) Supply of A.C./P.V.C. pipes of specified type & diameter and fittings such as socket, collar, socketed bends, socketed cross, socket and spigot layers, cap, and solvent cement for jointing of P.V.C. pipes.
- (2) Excavation trench including laying out, setting up sight rails, ramming soft bed, providing and ramming murum cushioning in rock excavation, shoring sloping, dewatering if required, protecting and refilling trench, after laying the pipe and making good excavated road surface.
- (3) Laying pipes including cutting where necessary and waste.
- (4) All necessary labour, materials and use of tools and equipment to complete the item satisfactorily.

#### *Mode of measurement and payment*

The contract rate shall be for one metre of pipe laid including all fittings. Making up C.I.D./Coupler joint paid for separately. For P.V.C. pipes the item includes jointing also. Cutting and waste will not be paid for separately. The length shall be measured net on the straight and curves along the centre line over the pipes and fittings correct upto one cm.

## DRAINAGE SPECIFICATION

### Stoneware or Hume Pipe Drain Line

The S.W. or Hume Pipes should be of approved Design and of standard quality.

The joints to be made (spigot and socket or collar as the case may be) by dashing 2 or 3 strands of tarred gasket which should be filled afterwards with neat C.M. (1 : 2) and wiped out clean. The line should be perfectly, straight and true to the required grade or slope.

Before filling the excavated trenches, the pipe line should be tested for standard hydraulic test to the entire satisfaction of the Architects. The item includes laying the pipe line on rammed and consolidated foundations jointing, testing and refilling the excavated trenches after completion of work. The trench is to be filled with hard murum for 30 mm. above the pipes and the rest should be filled with ordinary excavated stuff. the trenches to be filled in 2 layers. If any leakage is found it should be immediately removed.

### B. B. Masonry Chambers

The chamber shall be excavated to the depth required for the foundation below the drain pipe, at the site of the pit and shall be of required size. Foundations shall be (1:3:6) c.c. wall to be in 25 cm. brick work in C.M. (1:6) walls and bottom to be internally plastered with a 20 mm thick plaster thickness in cement and sand (1:3) finished with neat cement. At the bottom of each pit, a channel of full width and depth of pipe drain is to be constructed of cement concrete plastered with 25 mm. coating of cement and sand (1:3). Similar curved channels are to be constructed of cement concrete plastered with 2.54 coating of cement and sand (1:3). Similar curved channels are to be constructed in the pits to be given a gradient of 1 in 30. All cement work to be watered for 15 days after completion.

The rate shall be including excavating, base concreting, B.B. masonry, inside plastering, fixing of gully trap, fixing of C.I. frame and cover or concrete cover fixing, benching etc. complete. The C. I. frame & cover should be got approved before fixing.

### S. W. Sewer Trap Chamber

Specifications same as per above Item.

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The item includes providing and fixing sewer trap of size specified in the memorandum

with C. I. frame and cover of required size or precast R.C.C. cover as specified. The cover shall be fixed neatly on the top of chamber in C. M. (1:6)

The cover shall be of required weight and size either round or rectangular as required. C.I. steps shall be provided in the sewer traps chamber.

#### G. I. Vent Pipe

Providing and fixing 10 cm. dia. G. I. Pipe ventilator with screen cover of mosquito wire gauge, with burnt brick masonry in cement mortar in proportion 1:6.

Ventilator includes the construction of cement concrete foundation and pillar of 45 x 45 x 60 cm. as per instructions. The pillar should be plastered on all sides and should be watered for 10 days. 10 cm. dia. G. I. Pipe of 4.5 Metres height should be fitted in the pillar with mosquito gauge at the top end.

#### Providing and Laying Drainage Lines

- (1) The sewer shall be to the alignment and gradient shown on the places and sections and also actually on site. The socket end of pipes shall always face upstream of sewage flow.
- (2) The sewer shall run in perfectly straight lines between manholes as shown on plans.
- (3) The alignment and gradient of each pipe shall be checked by means of boning rod and sight rail and of the invert will be tested by means of straight edge regularly.
- (4) The pipes before being laid shall be thoroughly cleaned, specially at the inside of the pipes.
- (5) All the pipe joints shall be caulked with turned gasket in one length for each joint and sufficiently long to entirely surround the spigot end of the pipe. The gasket to be driven as far as possible into the joint by means of suitable instrument after the joint has been thoroughly cleaned and moistened and to be forced into it until the whole space around the spigot between it and the socket is full, the cement being sprayed off to form a next filled round the pipe.
- (6) No extra rate will be paid for cutting pipes to make up and adjust length in alignment between manholes.
- (7) After sufficient time has been allowed for the joints to set, before filling the trench, the joints of pipes must be proved water tight by filling the pipes with water to the level of 2 Metres above the top of the highest pipe in the length to be tested heading the water up for a period of testing. No portion of pipe shall under any circumstances be covered up until inspected and passed by the Architects.
- (8) The water test is made by inserting plug at the lower end of each length and a right angled bend at the top, brought into position and made tight with clay. The air bubbles having escaped after the first filling, water is again added to completely fill the pipe. If the water level does not fall more than 13 mm. in a length of 9 m. the joints may be

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regarded as satisfactory. All testing apparatus are to be brought and fixed by the contractor at his costs.

*Providing and fixing R.C.C. Saddle Blocks*

R.C.C. Saddle block of size (100 x 60 cm.) clear and 15 cm. thickness and those must be fixed in position and fixed in base in C.M. (1:6). Rate to include providing foundation for these blocks, curing etc. complete. The blocks will have to be cast on site as approved by the Architects. The curing tank must be constructed and blocks cured for 21 days. The reinforcement will be 12 mm. dia at 15 cm. c/c both ways.

Providing and fixing steel bars

Steel bars should be provided and fixed in position according as required and as per instructions. The payment will be done on M. T. basis.

WATER PROOF POLISH COAT OR RADSPAK WATER PROOFING

The water proofing liquid should contain epoxy resin and locker only. These two liquids should mix in a equal proportion and stirred well before applying on any dry surface. On mixing the liquid in well manner, it should be applied with a painting brush on dried surface which required to get the water proof. The aforesaid liquid is colourless. This liquid can be applied on a parapet top for preventing leakages or seepage of wall on outside so also on terrace flooring, tile flooring joints on Terrace slab, Toilet sunk slab, or Toilet flooring. The liquid should be applied as above for prevention of leakages after curing period of slab or concrete work. It is important that application should be on dry and clean surface. However such type of work should be done upto the satisfaction of Architects or Engineer concern.

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## **SECTION - L**

### MODE OF MEASUREMENT

In general the mode of measurements shall be as per standard practice laid down by the IS : 1200 – 1964 read with latest amendments, if any, except where it differs from that stated in the specifications, in which case, the mode of measurements as mentioned in the specifications shall prevail.

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## **SECTION - M**

### **SPECIFICATION FOR PLANTATION:-**

**TREES:-** Trees should be provided with at least 2.00 m height with the trunk diameter of 2 to 3 inches well developed and of the age not less than 2 years. The type and quality of the plant will be selected by the executive engineer and consultant appointed for the same. Approved saplings only should be brought on site. They should be well protected from fire, heat, animals and anything which may destroy them. They should be kept well watered till plantation in actual place. Excavation of the size of 0.90m x 0.90m x 0.90m at given place for each plant. The excavated pit should be filled with fertilisers, manure and insecticides for 1/3rd of excavated volume and remaining 2/3rd volume existing excavated soil. The plant should be provided with organic manure preferably. Initially plant should be supported by the help of bamboo sticks to grow the same in vertical direction. The procedure and specifications given in schedule B forms the part of this tender document. The plant should be well protected from natural calamities like rain, wind, animals, theft and all possible instances. They should be well maintained for one full year after completion of full work which is the defects liability period.

Measurements:- Trees will be measured in numbers.

**SHRUBS:-** Shrubs should be provided with at least 0.45 m height with the trunk diameter of 5 to 10 mm well developed and of the age not less than 1 years. The type and quality of the plant will be selected by the executive engineer and consultant appointed for the same. Approved saplings only should be brought on site. They should be well protected from fire, heat, animals and anything which may destroy them. They should be kept well watered till plantation in actual place. Excavation of the size of 0.30m deep at given place for each plant. The excavated pit should be filled with fertilisers, manure and insecticides for 1/3rd of excavated volume and remaining 2/3rd volume existing excavated soil. The plant should be provided with organic manure preferably. Initially plant should be supported by the help of bamboo sticks to grow the same in vertical direction. The procedure and specifications given in schedule B forms the part of this tender document. The plant should be well protected from natural calamities like rain, wind, animals, theft and all possible instances. They should be well maintained for one full year after completion of full work which is the defects liability period.

Measurements:- Shrubbery will be measured in sqm.

**LAWNS:-** Lawns should be provided well developed and of the age not less than 1 years. Instant Lawn should be used for the purpose. The type and quality of the lawn will be selected by the executive engineer and consultant appointed for the same. Approved saplings only should be brought on site. They should be well protected from fire, heat, animals and anything which may destroy them. They should be kept well watered till plantation in actual place. Excavation of the size of 0.30m deep at given place for the same. The excavated pit should be filled with fertilisers, manure and insecticides for 1/3rd of excavated volume and remaining 2/3rd volume existing excavated soil. The lawn should be provided with organic manure preferably. The procedure and specifications given in schedule B forms the part of this tender document. The plant should be well protected from natural calamities like rain, wind, animals, theft and all possible instances. They should be well maintained for one full year after completion of full work which is the defects liability period.

Measurements:- Lawns will be measured in sqm of actual area laid.

**SECTION - N**  
**Technical Specification :**

**Material Specification**

**\* Plastic bottles for pathway edging :**

- The plastic bottles should be used ones, purchased from scrap shop.
- The plastic bottles should be of 1/1.5 liter capacity, completely intact with no cracks, preferably with it's lid.
- The plastic bottles may be of any colour.

**\* Tyres for pathway edging**

- The Tyres should be used ones, purchased from scrap shop.
- The tyres can be of 2 wheelers / 4 wheelers, completely intact with no cracks.

**Checklist for obtaining construction quality bamboo poles :**

- Depending on the species, 3 to 5 year old bamboo is best for construction purposes
- The bamboo should be harvested in dry season in order to avoid fungus attack and excess pole moisture
  
- Use the appropriate species for the particular application
- Do not expose the bamboo poles to direct sun, moisture and rain • Use only straight portions from the bamboo culms for construction poles
  
- Poles should be treated against insects and fungus
- At the bamboo treatment pool, the bamboo poles should be soaked in a borax and boric acid solution for 7 days to allow the salts to fully penetrate the inside "meat" of the bamboo.
  
- The formula for treatment solution is 1.5cups of Borax and 1cup of Boric Acid to 4 Litres of water.
  
- After about one week, the bamboo poles should be pulled from the pool and stacked vertically so the preservation solution can drain from the bamboo and be recycled in the pool.
  
- Next, the bamboo poles should be left to bask in the sun for 1 week
- Bamboo poles should be rotated daily to avoid cracking.



# **EXTRACT OF APPROVED TENDER**

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**NASHIK MUNICIPAL SMART CITY DEVELOPMENT  
CORPORATION LIMITED, NASHIK**

**“EXTRACT OF REGISTER OF SANCTIONED TENDER”**

- |        |  |  |
|--------|--|--|
| 1.     | Name of work                               | Development of Nehru Garden at Nashik<br>for NMSCDCL under Amrut Scheme for year 2017-<br>18   |
|        | Name of the Contractor/s &<br>address      |  |
| 3.(i)  | Administrative approval                    |  |
| 3.(ii) | Technical sanction                         |  |
| 4.     | Estimated cost of the<br>scheme            | Rs.12,075,755/-  |
| 5.     | Estimated cost put to<br>Tender            | Rs. 12,075,755/-   |
| 6.     | Percentage                                 |  |
| 7.     | Tendered Amount                            |  |
| 8.     | Agreement No                               | B -1 ..... of 2017 –18   |
| 9.     | Acceptance of Tender                       | Executive Engineer, Nashik Municipal Smart City<br>Development Corporation Limited<br>,Nashik Letter No. ....<br>..... dated / /2017   |
| 10.    | Work Order                                 | Executive Engineer-II, Nashik Municipal Smart City<br>Development Corporation Limited<br>Nashik Letter No. ....<br>..... dated / /2017 |
| 11.    | Time Limit                                 | 6( six ) Calender Months (Including Monsoon).  |
| 12.    | Date of Start ( Stipulated)                | .....  |
| 13.    | Date of<br>completion(Stipulated)          | .....  |
| 14.    | Provision for materials on<br>schedule ‘A’ | - Nil -  |
| 15.    | Remarks                                    | .....<br>...   |

Executive Engineer  
Nashik Municipal Smart City Development Corporation Limited  
Nashik

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**CERTIFIED THAT THE TENDER HAS BEEN  
SCRUTINISED BY ME AND FOUND TO BE COMPLETED IN ALL  
RESPECTS**

Divisional Accountant  
Nashik Municipal Smart City  
Development Corporation Limited  
Nashik.

Chief Accounts Officer,  
Nashik Municipal Smart City Development  
Corporation Limited  
Nashik.

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# **DRAWINGS**

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PROPOSED 'NEHRU GARDEN' DESIGN PROJECT FOR NASHIK MUNICIPAL SMART CITY  
DEVELOPMENT CORPORATION.

ARCHITECT  
SUMIT AND BANSRI  
KUMATH

CONTRACTOR

EXECUTIVE ENGINEER



PROPOSED 'NEHRU GARDEN' DESIGN PROJECT FOR NASHIK MUNICIPAL SMART CITY  
DEVELOPMENT CORPORATION.

ARCHITECT  
SUMIT AND BANSRI  
KUMATH

CONTRACTOR

EXECUTIVE ENGINEER





PROPOSED 'NEHRU GARDEN' DESIGN PROJECT FOR NASHIK MUNICIPAL SMART CITY  
DEVELOPMENT CORPORATION.

ARCHITECT  
SUMIT AND BANSRI  
KUMATH

CONTRACTOR

EXECUTIVE ENGINEER

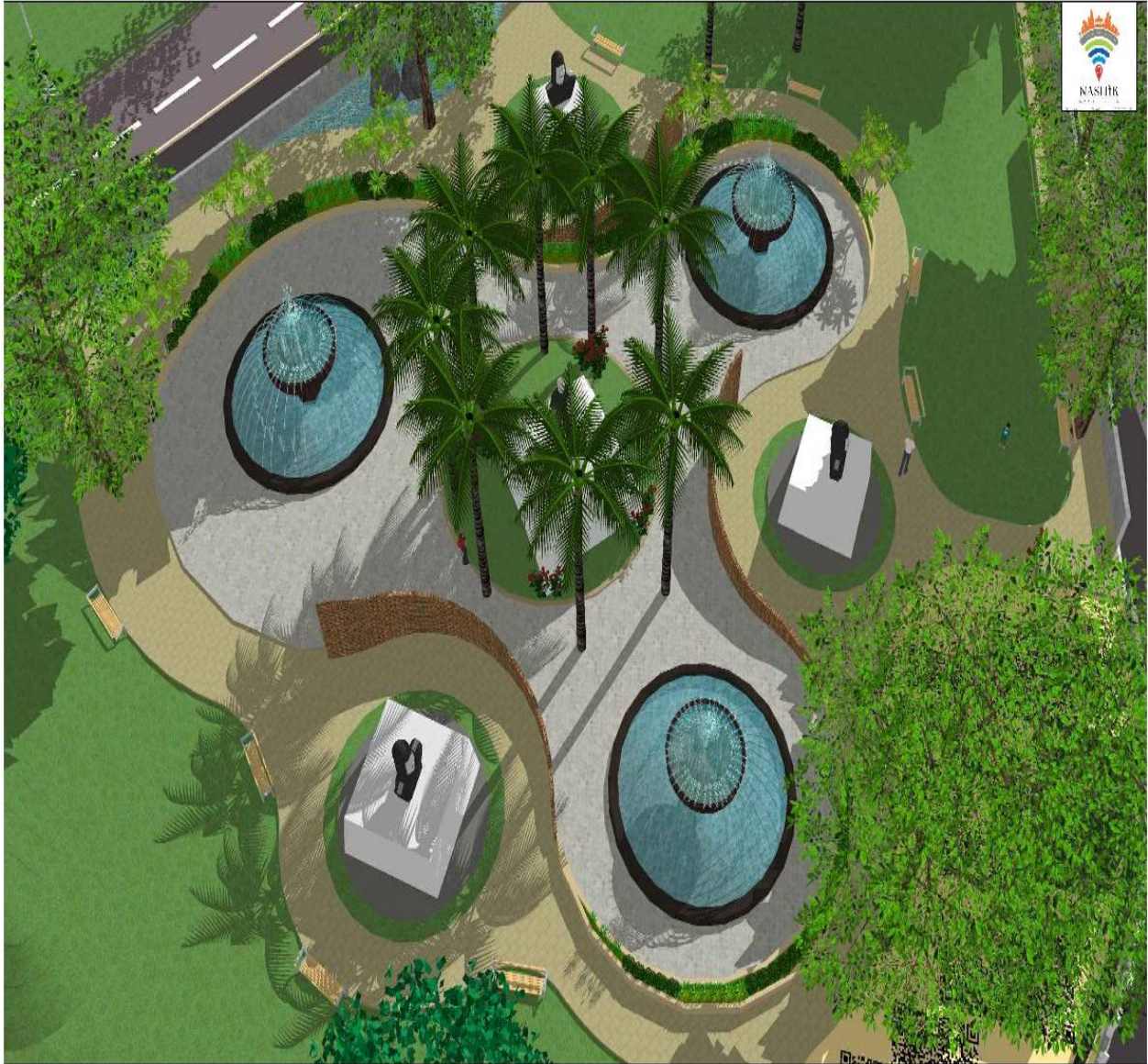


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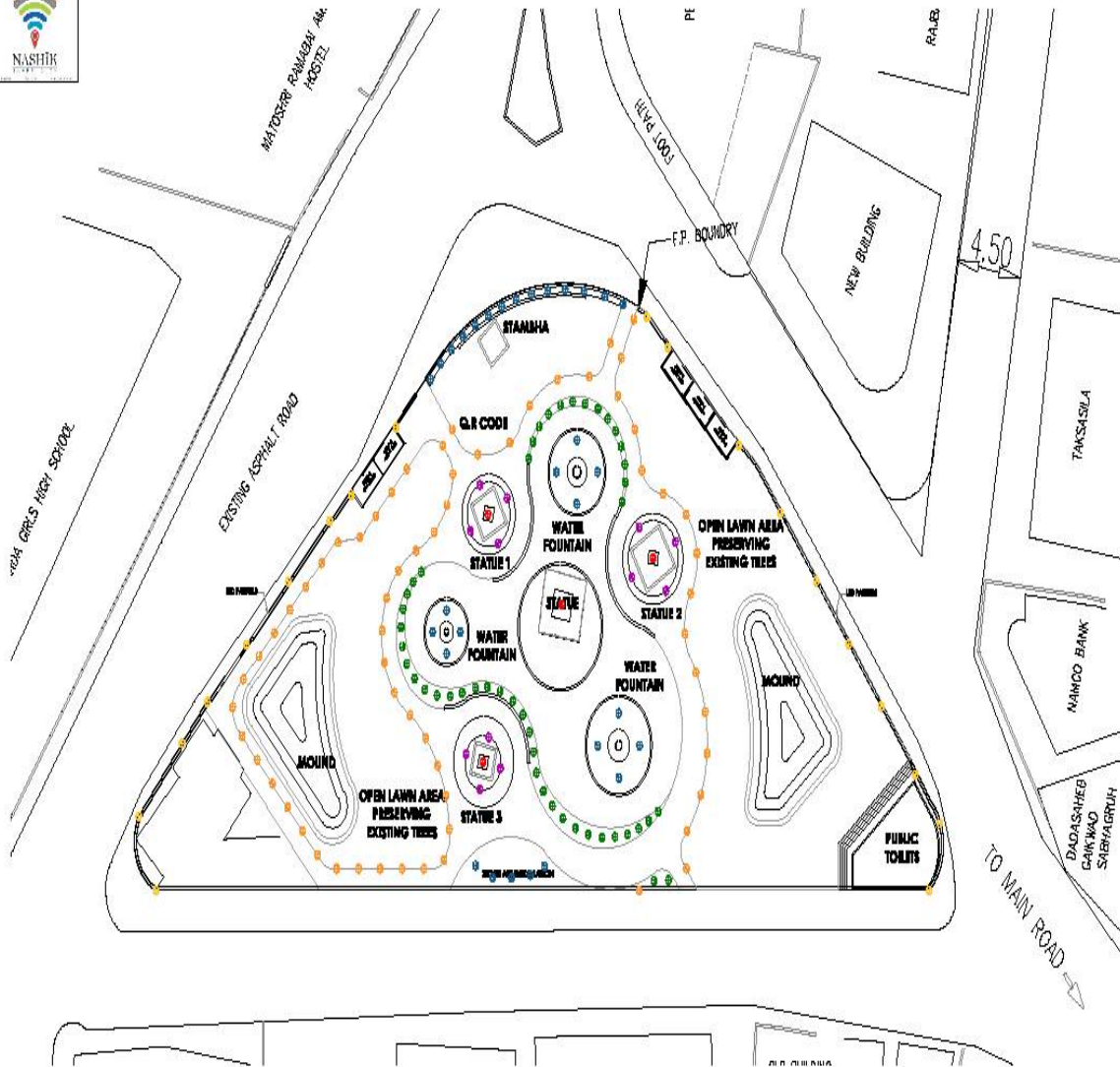


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DEVELOPMENT CORPORATION.

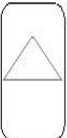
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**NEHARU GARDEN ,SHALIMAR, NASHIK.**



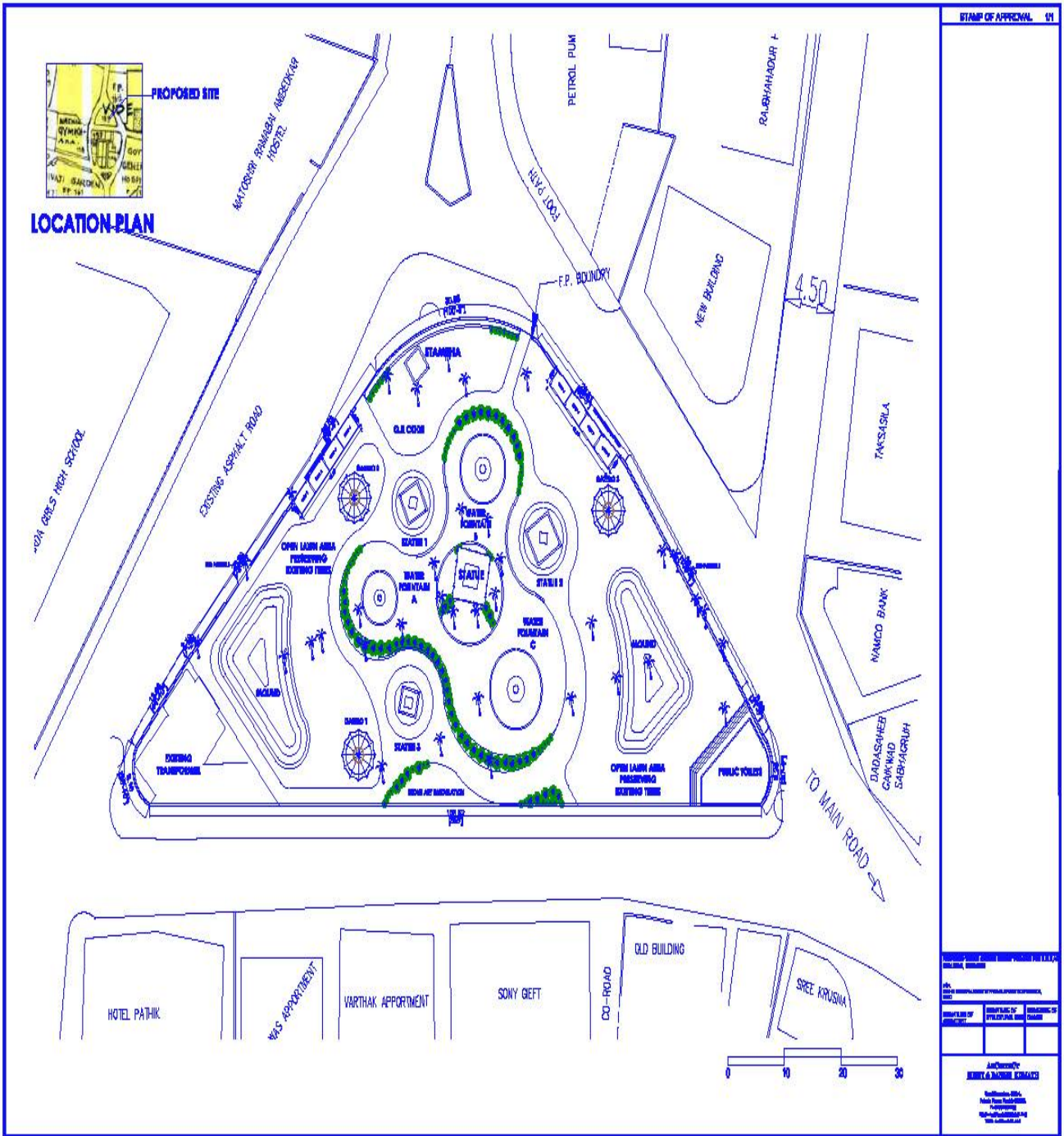
**ARCHITECT**  
**SUMIT &**  
**BANSRI**  
**KUMATH**

LIGHT CALCULATIONS	
NAME	NO
Led Strip light	4
Focus light	4
Water Led light	12
Floor light	78
Lamp post	62
Street light	30
TOTAL	190

Led Strip light length  
L1=4.00  
L2=4.00  
L3=4.00  
L4=4.00

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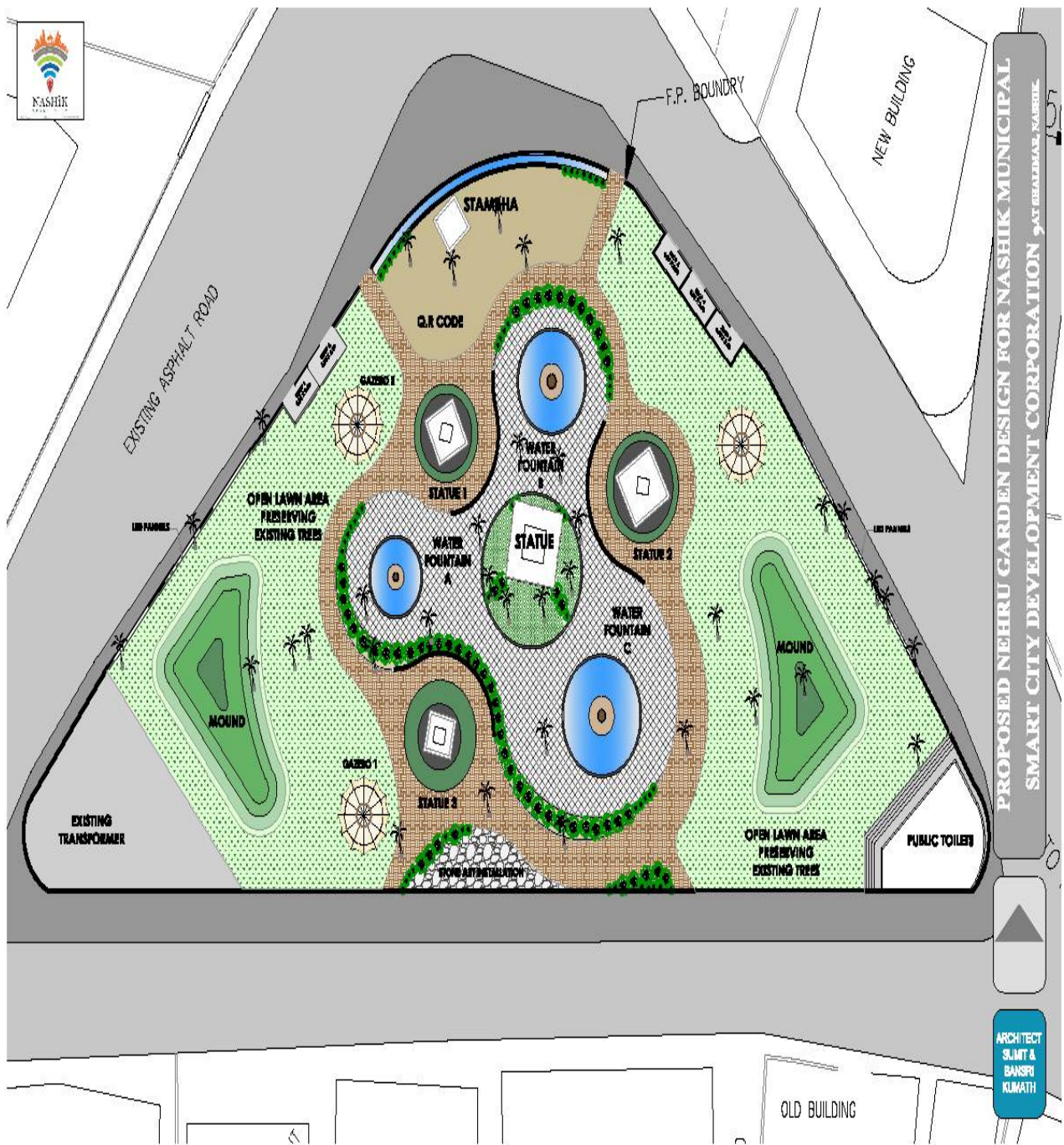


STAMP OF APPROVAL

NAME OF THE PROJECT			
DATE OF SUBMISSION OF PROPOSAL/DESIGN/CONTRACT			
NAME OF THE CONTRACTOR			
APPROVED BY:	DATE OF APPROVAL:	SCALE:	STATUS OF PROJECT:

APPROVED BY:  
**KIRIT & MANISH KUMAR**  
M/S. KIRIT & MANISH KUMAR  
Plot No. 101, New Town, Nashik,  
Maharashtra - 422001





CONTRACTOR

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