

# राष्ट्रीय औद्योगिक इंजीनियरी संस्थान

**NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING**

*Vihar Lake, Mumbai 400 087 .*

विहार सरोवर, डाकघर-नीटी, मंबई - 400 087.



कार्य हेतु निविदा प्रपत्र

**TENDER DOCUMENT FOR THE WORK**

**Internal painting to Type-II (17-32), Type - II(33-44),  
Watchmen quarters at NITIE Campus.**

निविदा निम्नलिखित कार्यालय में रखे निविदा पेटी में दिनांक 04/10/2016 सुबह  
11.00 बजे तक पहुंच जानी चाहिए ।

**Tenders to be reached on 04/10/2016 before 11.00 AM at the  
following address**

परीक्षा नियंत्रक के कार्यालय, पहली मंजिल, प्रशासनिक भवन, नीटी  
THE OFFICE OF CONTROLLER OF EXAMINATION, 1<sup>ST</sup> FLOOR,  
ADMINISTRATION BUILDING, NITIE, Mumbai 400 087.

NITIE, MUMBAI – 400 087.

NOTICE FOR INVITING TENDER

To

\_\_\_\_\_  
\_\_\_\_\_

Dear Sir(s),

NITIE invites **wax sealed/Tamper proof** / Percentage rate tenders in two envelop system from specialized, experienced and Registered, Contractors of appropriate class with NITIE/PWD/CPWD/MES/Railways/ IIT etc. who have carried out works of similar nature and magnitude in last five years, in respect of following work.

The Contractor shall produce copies of valid VAT, registration certificate, Solvency certificate, work completion certificate, the list of work in hand works completed along with details thereof. The copies submitted for the above should be attested.

Name of work	:	Internal painting to Type-II(17-32), Type-II (33-44), Watchmen Quarters at NITIE.
Cost of tender document	:	Rs.1000/- (Non refundable)
Estimated cost of work put to tender	:	Rs. 13,64,878.00
Earnest Money Deposit	:	Rs. 27,300.00 (Pay order or DD in favour of "NITIE, Mumbai " to be attached)
Period of contract	:	Six months
Last date of issue of tender form	:	30.09.2016 up to 3.00 PM
Last date of submission of tender form	:	04.10.2016 up to 11.00 AM
Place of submission of tenders	:	Tender Box kept in front of the office of Controller of Examination, Admn. Building, NITIE.
Date of opening of Tender	:	04.10.2016 up to 11.30 AM
Validity period of Tenders for acceptance	:	180 Days

You are requested to inspect the site and also to make the local inquiries before filling this tender so as to acquaint yourself /yourselves with local conditions etc.

The tenderer can also send the bid documents, wax sealed /tamper proof/Sealed cover by courier Service/Speed Post/ Registered A.D. , Addressed to the Director, NITIE, Vihar Lake, Mumbai 400 087, so as to reach the Institute before 11.00 A.M. on 04.10.2016 . It is the responsibility of the tenderer to ensure that the tender reaches NITIE office before 11.00 A.M. on 04.10.2016.

It is also responsibility of the tenderer to ensure that the tender are dropped in the specified box only.

The tenders (Technical Bid) will be opened in presence of the interested tenderers' at 11.30 A.M. on 04.10.2016 in Mini Conference Room, 1st floor, Admn. Building, NITIE.

Tender must be accompanied by earnest money by Demand Draft in the name of “**NITIE, MUMBAI** ” fixed deposit of a nationalized or a scheduled bank in favour of "NITIE, Mumbai ". The EMD will be returned to unsuccessful tenderers on deciding about the acceptance or otherwise of the tender or on expiry of the validity period whichever is earlier. The earnest money of the successful tenderer will be treated as security deposit and will be kept as a initial contract deposit for due execution of the contract. The security deposit will not bear any interest.

The offer tender for the work shall remain open for a period of 180 days from the date of opening of tender. The Institute shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money if any tenderer withdraws his offer before the said period or makes any modification in the terms and conditions of the tender which are not acceptable to the Institute and forfeit the whole earnest money if the tender is accepted, fails to commence the work in prescribed time or abandons the work before its completion.

The NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING don't bind themselves to accept the lowest bid and reserve the right to reject any or all the tenders without any assigning any reason thereof.

Yours faithfully,

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**Executive Engineer(I/c)**  
**on behalf of Director,**  
**National Institute of Industrial Engineering.**

## GENERAL DIRECTIONS TO TENDERS

1. Tenders should be submitted in Wax sealed/tamper proof Cover super scribed with the name of the work. All pages of tender documents, conditions and drawings etc. shall be initialed by the tenderer at the lower right hand corner. The tender should bear the full signature of the tenderer or of all the partners or the signature of the person holding power of attorney on behalf of the tenderer and in case the tenderer is a Pvt. Ltd. or Public Ltd. Co. by any competent authorized person , not below the rank of Director or Chief Executive. Any corrigendum or addendum will also form the part of the tender document and will have to be submitted by the tenderer along with the tender.
2. On receipt of the blank tender form the tenderer has to ensure that no correction or overwriting is left to be attested by the concerned officers. In case if clarification is required the tenderer may obtain it personally or in writing well in advance from the Executive Engineer. In any case the tenderer will be responsible to bind himself to the terms and conditions and specifications of the tender once submitted by him.
3. Tenderer shall submit the tender and other documents in two separate envelopes namely Technical Bid and Commercial Bid. These envelopes finally submitted in one big size envelope which should be wax sealed /tamper proof.

The Technical bid envelop – I shall contain the following documents.

- i) EMD- in the form of DD/Pay order/FDR in favour of, "NITIE, Mumbai "
- ii) Valid Registration certificate.
- iii) Solvency certificate
- iv) VAT Registration certificate.
- v) Work completion certificate of similar nature work executed in last 3 years.
- vi) Turnover certificates for last three years through the CA.

All the documents should be duly attested Original must be produced for verification, when demanded.

The second envelope clearly marked as "Commercial /Price Bid" shall contain only the main tender document. The tenderer should quote his offer as item rate / percentage rate at the appropriate place of the tender documents to be submitted only in envelope No.2. He should not quote his offer anywhere directly or indirectly in envelope No.1. The tenderer shall quote for the work based on the details given in main tender. The tender shall be unconditional. Any corrigendum /addendum will also form the part of the tender document and will have to be submitted by the tenderer along with the tender .No delays on account

of any cause will be entertained for the late receipt of tender. It is the sole responsibility of the tenderer to ensure that the completed tender should be dropped in the appropriate box before the due date and time.

Tenderers down loading tender should submit necessary tender fee in the form of D.D. in favour of "NITIE, Mumbai" along with other required documents as mentioned above.

The envelope –2 " Price bid" will be opened of only those tenderers whose technical bid is qualified, otherwise the envelope –No.2 will be returned to the tenderer. Tender does not contain the EMD or do not submit any other documents mentioned above, the tender will be summarily rejected.

4. Tenders are required to fill the Bill of quantities and work out the BID AMOUNT. The tenderer write the rates of all the items mentioned in the bill of quantities in figures as well as in words. The amount for each items shall be worked out and the total bid amount should then be worked out. All the corrections must be attested by initials of the tenders. The tenderers have to fill in the rates of all the items on bill of quantities. In case arithmetic mistakes in calculations of amounts, total and percentages, the rates of individual items will be considered as final and the amounts, total and percentage will be reworked. In case of discrepancies between the rates written in words and rates written in figures, the rates written in words will be considered as final, as the case may be of item rate or Percentage rate schedule.
5. NITIE reserves the right to accept or reject the tender if the tenderer fails to submit the following original/copies of the documents to be submitted.
  - i) EMD- in the form of DD/Pay order/FDR in favour of, "NITIE, Mumbai "
  - ii) Valid Registration certificate.
  - iii) Solvency certificate
  - iv) VAT Registration certificate.
  - v) Work completion certificate of similar nature work executed in last 3 years.
  - vi) Turnover certificates for last three years through the CA.
6. The earnest money of successful tenderer will be kept as initial contract deposit (ISD) for the execution of contract. The successful tenderer shall have to deposit in cash with the Institute (within fifteen days of receipt of work order) and additional sum towards the initial contract deposit (ICD) such that the total amount deposited towards ICD including the EMD will be equal to 5% of the contract amount (i.e., the awarded cost of work). The ISD will from the part of security deposit to be kept during the course of execution of work and up to the end of defects liability period. This security deposit will not bear any interest. In addition to the ICD additional amount will be recovered from the RA bills at rate of 10%

of bill amount such that the total security deposit with the Institute will not be more than the 10% of the contract amount or actual bill amount whichever is more. If the contractor fails to deposit ICD within 15 days of receipt of work order. The same will be recovered from 1<sup>st</sup> RA Bill / any other dues payable, with panel interest @ 18% P.A. worked out from the date of receipt of work order.

7. The defects liability period for the work will be twelve months from the date of actual completion as specified in clause No.22 of the conditions of contract at page No.21. The total of 10% will be retained as security deposit till the end of defect liability period and will be released to the contractor on satisfactory completion of defects liability period.
8. If the tenderer after having been awarded the contract fails to deposit further amount of towards initial contract deposit as aforesaid and/or fails to sign and complete the documents and agreement and / or fails to start the work within 15 days from the date of issue of work order. The Institute will be at liberty to terminate the contract/cancel the work order and forfeit the EMD/ICD of the contract without giving any notice thereto. Similarly the name of such tenderer will be deleted / will be debarred for quoting for a period of 3 years.
9. The Price bids shall be inclusive of all taxes, Octroi charges, incidental expenses and all other taxes and charges as may be applicable and are to be paid by the contractor for satisfactory completion of work and any claim for the extra payment on any such occasion shall not be entertained. It is explicitly made clear that even if the prices of material /labour goes up or for any reason the cost of the project work increases the Institute shall not be liable to pay any additional to the contractor. All payments of Govt. duties such as ESIC / PF etc. to be taken care by the contractor.
10. Under no circumstances contractor will be entitled to claim enhanced rates for any item in this contract.
11. All work shall be measured according to the rules of Indian Standard without reference to any local custom unless otherwise specified.
12. Deduction on account of Income tax @ 2% or such percentages as may be in force from time to time will be made from all bills whether Running or Final bill and certificate of deductions will be given to the contractor or as per change made by Govt. in the request.
13. Receipts for payments made on account of any work when executed by a firm shall also be signed by all partners except where the contractors are described in their tender as a firm in which case the receipts shall be signed in the name of the firm by one of the partners or by some other person having authority to give effectual receipt for the firm.
14. The entire work shall be carried out under the supervision of the staff /Person Employed By NITIE.
15. The contractor shall take into consideration the relevant standard specifications PWD or ISI codes required for the above referred work and entire work shall be carried out as per the

relevant Standard specifications of PWD or ISI codes and by laws and to the satisfaction of the Executive Engineer.

16. The contractors without any additional cost shall make the necessary arrangement for water and Electricity for the purpose of execution of this contract. If the same is supplied by the Institute the cost of supply of water and electricity will be deducted from the contractor's running bill (water charges will be 1% of the cost of water consuming items and Electricity at the rate of Rs.13.50 per unit of consumption). Electricity will be provided at one point and contractor to arrange meter and cable etc.
17. NITIE will not supply cement to the contractor. The contractors should make their own arrangement to procure and store the cement at their site of work please see the additional conditions for materials.
18. All the requisite tests have to be carried by the contractor at his own cost from approved rates of the Institute.
19. SAND to be used for the various work items in above referred works shall be river sand (Preferable Vaitarana River) It shall be clean and free of silt and other objectionable materials.
20. The items involving hidden measurements should be executed only after specific approval obtained in writing from the Executive Engineer. On confirmation to execute such items the agency has to submit the detailed measurement with locations and then only the work is to be executed. If the agency fails to submit such detailed measurements before executing the item decision of the Executive Engineer will be final and binding on the contractor.
21. No work shall be carried out on National Holidays and Institute holidays (including Saturday and Sundays) The work shall be executed during the working hours of the Institute on working days only. For the execution of works on holidays and beyond Institute working hour's specific approval should be obtained by the agency. The Permission will be given at the discretion of the Institute authority. No request for extension of time on this issue will be entertained.
22. Proportionate Progress of work – Time will be the essence of the contract. The contractor Shall complete the whole work within the time stated in the tender subject to the conditions of contract and shall co-operate with the Institute from time in the preparation of time and progress chart for its use. Broadly  $\frac{1}{4}$ <sup>th</sup> work in  $\frac{1}{4}$ <sup>th</sup> times, half the work in half time,  $\frac{3}{4}$ <sup>th</sup> work in  $\frac{3}{4}$ <sup>th</sup> time and complete work the stipulated time. If at any stage of work it is found that the milestones are not adhered to as mentioned above Institute can initiate any or all actions mentioned below.
  - a. Impose the liquidated damages for the delayed part of work either in terms of Rs.500.00 per day or 1% of balance amount of the stage whichever is more.
  - b. Terminate the contract at that stage itself by issuing 7 days notice and get the balance work done as per clause No.23(B) or general conditions of contract.

23. All the works are to be carried out as per relevant IS specifications /PWD red book specifications. The work is to be carried out as per specific requirement.
24. All the works are to be guaranteed separately as per specification on appropriate bond paper.
25. No receipt for any payment alleged to have been made by the contractor in regard to any matter relating to this tender or the contract shall be valid and binding unless it is approved and signed by the owner.
26. NITIE reserves the right to accept or reject any tender or all tenders without assigning any reasons thereof.

### **Eligibility Criteria**

27.
  - a) **General** –
    - 1) Should be registered in appropriate class in PWD/ CPWD/MES/ Railways/IIT etc.
    - 2) Should have valid **VAT** registration.
    - 3) Should have solvency certificate from Nationalized or scheduled bank of 40% of estimated cost.
  - b) **Experience – Should have completed**
    - i) One work of similar nature costing 80% of estimated cost
    - OR
    - ii) Two works of similar nature costing 60% of the estimated cost
    - OR
    - iii) Three works of similar nature costing 40% of the estimated cost during last 5 years.

### **Certificates of the above should be produced.**

- c) **Financial** -
  - i) Should have had average annual financial turnover of 50% of estimated cost during the last 3 years ending on 31<sup>st</sup> March.
  - ii) Should have not incurred any loss in more than two years during the last five years ending 31<sup>st</sup> March.



## **UNDERTAKING**

From: -----

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To

The Director

National Institute of Industrial Engineering

Vihar lake, P O NITIE, Mumbai – 400 087.

Dear Sir,

I/We the undersigned have carefully gone through and clearly understood the Tender Drawings and the tender documents comprising of Notice to contractors, general instruction to tenderer, Tender Form, Articles of agreement, general conditions, Material specification, special specifications etc. for above said work prepared by National Institute of Industrial Engineering.

I/We have also taken into consideration the nature and position of the site and the site and the surrounding and the conditions under which the work will be carried out. I/We do hereby undertake to execute the complete the whole or the part of the work covered by the tender strictly in accordance with the above tender drawings & documents..

I/We enclose herewith receipt of earnest money paid in cash at NITIE's account office/Demand Draft No. ----- drawn on -----) bank as earnest money for a sum of Rs.----- ( Rupees ----- only ) in favour of "National Institute of Industrial Engineering" and in the event of your accepting my/our above tender. I/We agree to convert the earnest money of Rs. ----- as security deposit. I/We understand that the security deposit mentioned above shall not bear any interest. In the event my/our tender being accepted I/We agree to enter into a contract in the form annexed hereto with such alterations and additions thereto as may be necessary to give effect to the acceptance of this tender and such contract shall contain and give full effect to the whole scheme and the drawings attached to the tender.

I/We further agree to complete the work included in the whole scheme within Six Months of the date of commencement of the work and subject to agreement liquidated damages of Rs. 500/- ( Rupees five hundred only ) per day beyond that date for the period for which the work remains incomplete due to my/our default. I/We understand that neither the maximum nor any tender will be necessarily accepted and that no reason shall be given for such non acceptance. In case of my/our tender is accepted, I/We agree to pay all the charges connected with the preparation. Stamping and execution of the contract agreement and I/We shall abide by the terms of contract and such other reasonable terms and conditions the Institute may fix from time to time depending on the circumstances.

I/we hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Yours sincerely,

(Tenderer's signature)

Date:

Address:

Witness signature: 1)

2)

ARTICLES OF AGREEMENT made the ----- day of -----

Between NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING, VIHAR LAKE,  
PO. NITIE, MUMBAI – 400 087.

(Hereinafter called the “Employer”) of the one part -----  
AND -----  
-----

Whose registered office is situated at -----  
-----

(Hereinafter called the “Contractor”) of the other part.

WHEREAS the employer is desirous of getting the work of -----  
----- and has caused drawings and specifications describing the works to  
be done and -----, Preparing by -----

WHEREAS the contractor has agreed to execute upon and subject to the general  
conditions a specifications of contract works shown upon the said drawings and/or  
described in the said specifications.

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

1. The contractor shall upon and subject to the said conditions execute and complete the works shown upon the said drawings and described in the said specifications and/or the schedule of quantities.
2. The said general conditions of contract special conditions of contract and other enclosures thereto shall be read and constructed as forming part of this Agreement and the parties hereto shall respectively abide by and submit themselves to the conditions and perform the agreements on their part respectively in such conditions contained.
3. The plans, agreement and documents mentioned herein shall form the basis of this contract and the decision of the said Director NITIE/as mentioned in the conditions of contract, Special conditions of contract in reference to all matters of dispute as to material, Workmanship and account and as to the intended interpretation of the clauses of the agreements or any other document attached shall be final and binding on both parties and may be made a rule of the Court.
4. This contract is a contract to carry out work in respect of the entire works.

5. The Institute has right of altering the drawings and nature of the works, adding to or omitting any items of work or having portions of the same carried out through other agency as the Institute deem fit in the interest of the Institute. The Institute in such circumstances shall be entitled to deduct or add proportionately the amount apportioned to such work in this contract, or as may be decided by the Institute.
6. The Institute has the right to abandon the work at any stage without any reason thereof and in which case the agreed cost of work will also be changed accordingly.
7. Time shall be the essence of the agreement and the contractor hereby agrees to commence the work soon after the site is handed over to him as provided for in the said conditions and to complete the entire work within the stipulated period.
8. All disputes arising out of or in any way connected with this agreement shall be deemed to have been arisen in Mumbai and only the Courts of Mumbai shall have jurisdiction to determine the same.
9. The parties have thoroughly read and have understood the entire contract and are fully aware of its implications and consequences thereof.
10. The electrical installations and fittings and electric lights and telephone installations also form part of this contract, but the contractor shall afford every reasonable facility for the carrying out of all such works in the manner laid down in the said conditions and shall make good even minor damage done to wall, floors etc. after the completion of such works. The presence of telephone cables/electrical cables/pipelines, glass etc. to be conveyed to the deptt. for removal/diversion etc. before commencement of further works. Any damage to the same will be recovered / replaced from the contractor.

AS SIGNED our hands this -----day of -----2016

1) Owner

Signature

NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING,  
VIHAR LAKE, PO NITIE, MUMBAI 400 087.

2) Contractor

Signature

AS WITNESSED our hands this -----day of ----- 2016

Signature

**THE GENERAL CONDITIONS OF CONTRACT HEREIN BEFORE REFERRED TO**

1. **INTERPRETATIONS** In constructing these conditions, the specifications schedule of quantities and contract agreement the following word shall have the meaning herein assigned to them except where the subject or context otherwise requires:
  - a) 'Owner' shall mean NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING(NITIE) and shall include their legal representative/s, assign/s or successors.
  - b) 'Contractor' shall mean ----- and shall include his (their) legal representative/s, assign/s or successors.
  - c) 'Site' shall mean the site of the contract works viz. NITIE CAMPUS including any construction thereon and any other land ( inclusively as aforesaid allotted by the Owner for the contractor's use).
  - d) 'This contract' Shall mean Articles of Agreement, the general conditions, special conditions, plan the appendix, the schedule of quantities and / or specification attached hereto and duly signed including any amendment or modification thereof, required to be carried out during the course of this arrangement.
  - e) 'Work order' Shall mean letter issued by the Executive Engineer and sent to the selected tendered by regd. Post A/D conveying the decision of the Institute of having selected him / them for the job and asking him/ them to commence the work.
  - f) 'Notice' in written or written notice shall mean a notice in written, typed or printed characters sent( unless delivered personally or otherwise proved to have been received ) by regd. Post to the last known private or business address or regd. Office addressee and shall be deemed to have been received when the ordinary course of post it would have been delivered.
  - g) 'Act of insolvency' shall mean any act of insolvency as defined by the Presidency Towns insolvency Act or the Provincial insolvency act amending such original.
  - h) 'Net prices' If in arriving at the contract amount the contractor shall have added to or deducted from the total of the items in the tender any sum either as a percentage or otherwise, then the net price of any time in the tender shall be the sum arrived at by adding to or deducting from the actual figure appearing in the tender as the price of that item a similar percentage or proportionate sum. Provided always that in determining the percentage or proportion of the sum so added or deducted by the contractor the total amount of any Prim cost items and provisional sums of money shall be deducted from the total amount of the tender. The expression 'Net Rates' or 'Net prices' when used with reference to the contractor or accounts shall be held to

mean rates or prices so arrived at...

- i) 'Engineer at site' shall mean a qualified Engineer as appointed by the owner to supervise the work at site on his behalf.
- j) 'Authorized Representative of contractor' shall mean and include person deputized by the contractor before starting the work with authority to accept the instructions from NITIE receive documents sign various papers as a token of acceptance on behalf of the contractor.

2. **SCOPE OF CONTRACT** The contractor shall carry out and complete the said work in every respect in accordance with the contract and as per the specification. The contractor shall execute the whole and every part of the work in the most substantial and workman like manner and both as regards materials and every other respect in strict accordance with the specifications. The contractor shall confirm exactly, fully and faithfully to the designs, drawings, specifications directions and instructions in writing related to the works. All the unforeseen work items required to be executed for successful completion of the work items and which are allied to the same are to be executed by the contractor. The Executive Engineer may in his absolute discretion issue further drawings and / or written instructions, details, direction and explanations which are hereafter collectively to be referred as the Executive Engineer's instructions in regarding to:-

- a) The variation or modification of the design, quality of work or the addition or omission or substitution of any work.
- b) Any discrepancy in the drawings or between the schedule or quantities and / or drawings and / or specifications.
- c) The removal from the site of any material brought thereon by the contractor and the substitution of any other material there for.
- d) The removal and / or re-execution of any works executed by the contractor
- e) The dismissal from the works of any persons employed thereupon.
- f) The opening up for inspection of any work covered up.
- g) The amending and making good of any defects under clause 19.

The contractor shall forthwith comply with and duly execute any work comprised in such instructions provided always that verbal instructions, directions and explanations given to the contractor or his representative upon the works by the Executive Engineer shall, if involving a variation be confirmed in writing by the contractor within 7(seven) days. If compliance with the Executive Engineer's instructions as aforesaid involves extra work and / or expense and/or loss beyond that contemplated by the contract then unless the same were issued owing to some breach of this contract by the contractor, the owner shall pay to the contractor mutually agreed rates if not already provided for in the tender documents prior to

the physical execution of the work involved.

3. **DRAWINGS AND SCHEDULE OF QUANTITIES:** One copy of the contract documents shall remain in the custody of the owner and the second copy in the possession of the contractor and third copy with the Architect. The contractor shall check all drawings carefully and intimate the Institute/Architect/Executive Engineer in writing immediately of errors and discrepancies if any. The contractor shall not change any kind of errors or omission in the drawings supplied to them by their own.

The drawings which form part of this contract will show the work to be done in such details as is possible to do for the present. They will be supplied with or superseded by such additional detailed drawings as may be necessary as the work progress in accordance with these details of or revised drawings as the case may be and at the applicable rates as per contract. Contractor will return all the drawings /specifications issued from time to time after final completion of work. The contractor on the signing hereof shall be furnished by the owner / his Architects free of cost with a copy of the priced Schedule of quantities, one copy of all further drawings issued during the progress of the works. Any further copies of such drawings required by the contractor shall be paid for by him. The contractor shall keep one copy of all drawings on the works and the Architect/Engineer their representative shall at all reasonable time same.

4. **DISCREPANCIES IN DRAWINGS AND SPECIFICATIONS.** The drawings and specifications are to be considered as mutually explanatory of each other. However in case of any discrepancies following order will be followed. Detailed drawings being followed in preference to small scale drawings and figured dimensions in preference to scale special conditions in preference to general conditions. Detailed specifications as mentioned in the red book of PWD in preference to general preference. ISI specifications in preference to detail specifications. Should any discrepancies however appear or should any misunderstanding arise as to the meaning and import of the said specifications or drawings or as to dimensions or the quality of the materials or the due and proper execution of the works or as to the measurement or quality and valuation of the works executed under this contract or extra thereupon the same shall be explained by the Executive Engineer and their explanation shall be binding upon the contractor and contractor shall execute the work according to such explanation and shall also do such works and required things as may be necessary for the proper completion of the works as implied by the drawings and specifications even though such works and things are not specifically shown and described in the said drawings and specifications.

5. **CONTRACTOR TO PROVIDE FACILITIES & CO-OPERATION.** Contractor shall provide everything necessary for the proper execution of the works according to the intent and meaning of the drawings, schedule of quantities and specifications taken together whether the same may not be particularly shown or described therein provided that the same can reasonably be inferred there from and if contractor finds any discrepancy in drawings or between the drawings, schedule of quantities and

specifications he shall immediately and in writing refer same to the Executive Engineer who shall decide what is to be followed.

6. **AUTHORITIES, NOTICES AND PATENTS.** The contractor shall confirm to the provisions of any act of the Legislature relating to the works and to the regulations & bylaws of any authority and of any water, lighting & other companies and/or authorities with whose system the structures is proposed to be connected and shall, before making any variations from the drawings or specification that may be necessitated by so confirming, give to the Owner written notice specifying the variation proposed to be amended time receive such instructions he shall proceed with the work, conforming to the provisions, regulations or bylaws in question and any variation so necessitated shall be dealt with under clause No. 13. The contractor shall bring to the attention of the Executive Engineer all notices required by the said acts, regulations or bylaws to be given to any authority and pay to such authority or to any public office all fees that may be properly chargeable in respect of the works & lodge the receipt with the owner. The contractor shall identify the owners against all claims in respect of patent rights, all shall defend all actions arising from such claims & shall himself pay all royalties, license fees, damage, costs penalty legal charges and charges of all and every sort that may be legally incurred in respect thereof including octroi if payable.
  
7. **SETTING OUT WORKS.** The contractor shall set out the works & shall be responsible for the true & perfect setting out of the same & for the correctness of the positions, levels dimensions & alignment of all parts thereof. If at any time any error in this respect shall appear during the progress of the work the contractor shall at his own expense rectify such error if so required to the satisfaction of the Executive Engineer. Before start of work reference lines & bench marks shall be established, permanent base line & cross lines shall be established by the contractor at sufficiently close intervals in consultations with the Executive Engineer. The Contractor shall provide at his expenses all templates, pillars and equipments (including chain, tape etc.), materials and labour for establishing the grand lines & pillars & shall be responsible for their maintenance during the work period of the constructions. The reference posts/bench marks & pillars already established at site shall be fully guarded. He shall repair/rebuilt the same in case of any damage or otherwise.
  
8. **MATERIALS AND WORKMANSHIP TO CONFORM TO DESCRIPTION.** The contractor shall at his own expense, provide all materials required for works other than those which are to be supplied by the Institute. All materials and workmanship shall so far as procurable be of the respective kinds described in the schedule of quantities and in conformity with the specification and in accordance with the instructions and the contractor shall upon the request of the Engineer furnish them with all invoices, accounts receipts and other vouchers to prove that the materials comply therewith. The contractor shall at his own expense and without



delay, supply to the Executive Engineer samples of materials proposed to be used in the work. The Executive Engineer shall within seven days of supply of samples intimate to the contractor in writing whether the samples are approved by him or not. If samples are not approved, the contractor shall forthwith arrange to supply to the Executive Engineer for approval fresh samples complying with the specification laid down in the contract. The contractor shall at his own cost arrange for and / or carry out any test of any materials from Govt. authorized labs which the Executive Engineer may require.

9. **CONTRACTOR'S SUPERINTENDENT AND REP. OF THE WORKS.** The contractor shall give all necessary personal superintendence during the execution of the works and as long thereafter as the Executive Engineer may consider necessary until the expiration of the “**defects liability period**” stated in the Appendix hereto. The contractor shall also during the whole time the works are in progress employ a competent authorized representative who shall be constantly in attendance at the site while the men are at work. Any directions, explanation instructions or notices given by the Executive Engineer to such representative shall be held to be given to the contractor. The contractor will be asked to stop the work forthwith if his authorized representative is not the site during the progress of the work.
10. **DISMISSAL OF WORKMAN.** The contractor may on the request of the Owner/Engineer immediately take disciplinary action against any person employed thereon by him who may in their option is incompetent or indulge in any misconduct and such person shall not be again engaged for the work being carried out at the Institute's premises without the sanction of the Institute. It is expressly agreed and understood between the parties that under no circumstances, the workmen employed by the contractor can be considered as the workmen of the Owner. The contract shall have full and final authority in respect of such contractor's workmen. Similarly, it is expressly agreed that the contractor shall comply with all the requirements of rules and regulations contained in various acts and enactments concerning labour laws. Further he shall maintain day to day attendance cum wage registers, all other records concerning the workmen pay minimum wages, as applicable etc. further any injury caused to any workmen during the course of work or otherwise, the contractor shall alone be responsible for treatment compensation, damage interest etc. under the provisions of workman's compensation Act. 1923 to the extent applicable. The contractor has to obtain at his own cost the license and get himself regd. Under the provisions of the contract labour (Regulation and Abolition) Act. 1970. Under no circumstances, the owner shall be responsible for any lapses on the part of the contractor.
11. **ACCESS FOR EXECUTIVE ENGINEER TO WORKS.**  
The Executive Engineer and their representatives shall at all reasonable time have access to the works and the workshops, factories or other places where materials are lying or from which they are being obtained and the contractor shall give every facility to the Executive Engineer and their representative necessary for inspections and examinations and

test of the materials and workmanship. No person unauthorized by the Executive Engineer except the representatives of public shall be allowed on the works at any time.

- 12 **ENGINEERS AT SITE.** The terms “Engineers at site” shall mean the person appointed and paid by the Institute. The contractor shall afford the Engineer at site every facility and assistance for inspecting the works and materials and for checking and measuring time and materials. The Engineer at site shall not have power to set out the works or to revoke after, enlarge or relax any requirements of the contract or to sanction any day work additions, alterations, deviations or omissions or any extra work whatever except in so far as such authority may be specially conferred by a written order of the Executive Engineer. The Engineer at site or Executive Engineer shall have power to give notice to the contractor or to his representative of non-approval of any work or materials and such work shall be suspended or the use of such materials shall be discontinued until the decision of the Executive Engineer is obtained. The works will from time to time be examined by the Executive Engineer the Engineer at site but such examination shall not in any way exonerate the contractor from the obligation to remedy any defects which may be found to exist at any stage of the works or after the same is completed. Subject to the limitation of this clause the contractor shall take instructions only from the Executive Engineer.

- 13 **ASSIGNMENT AND SUB-LETTING.** The whole of the works included in the contract shall be executed by the contractor and the contractor shall not directly or

indirectly transfer assign or underlet the contractor or any part thereof or interest therein without the written consent of the Architect and no undertaking shall relieve the contractor from the full and entire responsibility of the contract or from the active superintendence of the works during their progress. In case the whole or a part of the work is subject to any subcontractors or such agents, the contractor shall identify the owner that any claims/damages theft arising out of any acts/omission or commissions of such subcontractor or agents in whatever manner. The responsibility for the satisfactory completion of the work as per this contract shall be entirely his(contractors). If the work is sublet by the contractor at any point of time without informing the Institute, the same shall be terminated by the Institute without giving any notice/period and reasons thereof.

- 14 **VARIATION NOT TO VITIATE CONTRACT.** The quantities of work shown in the tender are approximate and no claim shall be entertained for quantities of work executed being more or less than those entered in the tender or estimate. No revision in rates shall be permitted in any respect of any of the items on account of any variation in the quantities. No alteration, omission or variations shall vitiate this contract but in case the Executive Engineer thinks proper at any time during the progress of the works to make any alterations in or additions to or omission from the works or any alteration in the kind or quality of the materials to be used therein and shall give notice thereof inform in writing under his hand to the contractor, the contractor shall alter, add to or omit from as the case may require in accordance with such notice but the contractor shall not do any work extra to or make any alterations or additions to or omissions from the works or any deviation from any of the provisions of the contract, stipulation specification or contract drawings without the

previous consent in writing of the Architect/Executive Engineer and value of such extras alterations additions or omissions shall in all cases be determined as per clause 18 and the same shall be added to or deducted from the contract amount accordingly.

If at any time after acceptance of the tender the Institute shall decide to abandon reduce the scope of works for any reasons whatsoever and hence not require the whole or any part of work to be carried out the Executive Engineer shall inform the contractor in writing to that effect and the contractor shall have no claim to any payment or compensation or otherwise whatsoever on account of loss or any profit or advantage which he might have derived from the execution of the works in full but which did not derive in consequence of the foreclosure of the whole or part of the works. The contractor shall be paid at the contract rates full amount of the work actually executed at site.

15. **SCHEDULE OF QUANTITIES:** The schedule of quantities unless otherwise stated shall be deemed to have been prepared in accordance with the standard method of measurement of building works by ISI. Any error in description or in omission or items from the schedule of quantities shall not vitiate this contract but shall be rectified and the value thereof as ascertained under clause 18 hereof shall be added to or deducted from the contract amount (as the case may be) provided that there shall be no rectification of errors in the contractor's schedule of rates.
16. **SUFFICIENCY OF SCHEDULE OF QUANTITIES.** The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of this tender for the works and of the prices stated in the schedule of quantities and/or the schedule of rates and prices which rates and price shall cover all his obligations under the contract and all matters and things necessary for the proper completion of the works. Any such discrepancy if observed is to be brought to the notice of the Executive Engineer before commencement of the work. However if any discrepancy is noted during the execution of the works the same shall be decided by the Executive Engineer and their decision shall be final and binding on the contractor.
17. **MEASUREMENT OF WORK.** The Executive Engineer may from time to time intimate to the Contractor that they require the works to be measured and the contractor shall forthwith attend or send a qualified agent to assist the Architect/Executive Engineer in taking such measurement and calculations and to furnish all particulars and to give all assistance by either of them should the contractor not attend or neglect or omit to stand such agent then the measurement taken by the Executive Engineer shall be taken to be the correct measurements of the works. Such measurements shall be taken in accordance with the standard method of measurement of building works last before issued by the Indian Standard Institution unless otherwise provided in this contract. Contractor shall sign all the measurements and documents in token of acceptance. The contractor or his agent may at the time of measurement take such notes and measurements as he may require.
18. **PRICES FOR EXTRAS ETC. ASCERTAINMENT OF.** Should it be found during

progress of works or after the completion of the works from measurements taken ( in accordance with the previous paragraph ) that any of the quantities or amount of works thus ascertained are less or greater than the quantities or amounts specified for the works in Priced Schedule of and / or Tender or that any additional, altered or substituted item of work is to be or has been executed unless previously or otherwise agree upon valuation of the work shall be made in accordance with the following rules:

- a) If the rates for additional, altered or substituted item of work is specified in the bill of quantities and rates in the contract the contractor shall carry out the additional, altered or substituted item at the same rate.
- b) If the rate for additional altered or substituted item of work is not specified in the bill of quantities and rates in the contract, the contractor shall carry out the additional, altered or substituted item at the relevant rates in departmental schedule of rates of PWD prevalent at the time.
- c) If the rate for additional, altered or substituted item of work cannot be determined in the manner specified in a) & b) above than the contractor will be paid at such fair and reasonable rate as worked out by the Executive Engineer on the basis of material, labour etc. required for the item and allowing 10% to cover profits and overhead charges.

The measurement and valuation in respect of the contract shall be completed within the “Period of Final Measurement” stated in the Appendix or if not so stated then within six months of the completion of the contract works as defined in clause.

19. **UNFIXED MATERIALS NOT TO BE TAKEN IN TO ACCOUNT FOR**

**VALUATION OF WORK.** Value of the unfixed / unutilized / defective materials will not be taken into account for valuation of work executed and advance for materials will not be paid to the contractor against the cost of material brought h to site.

20. **REMOVAL OF IMPROPER WORK.** The Executive Engineer shall during the progress of the works have to order in writing from time to time removal from the works within such reasonable time as may be specified in the order or any material which in their opinion are not in accordance with the specification the substitution of proper materials and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the drawings and specification or instructions and the contractor shall forthwith carry out such order at his own cost. In case of default on the part of the contractor to carry out such order the owner shall have the power to employ and pay other persons to carry out the same and all expenses consequent or incidental thereto as certified by the Architect shall be borne by the Contractor or may be deducted by the Owner from any moneys due or that may become due to the Contractor.

21. **DATE OF COMMENCEMENT.** The Contractor shall be allowed admittance to the site on the “Date of Commencement” stated in the Appendix. As aforesaid the work order will be issued by the Executive Engineer by regd. Post A/D and a period of four days shall be considered as period of postal transit. The work order would be deemed to have been received by the selected tenderer on fifth day after the issue of work order letter and the conditions of contract would come into force immediately from the day on which work order is deemed to be received and would be binding on the Institute and on the contractor a separate contract may or may not be signed thereafter. A period of five days will be considered as the mobilization period and the period of work will be deemed to be commenced at the end of the mobilization period. This date of commencement shall be mentioned in the work order as well as in the appendix in the contract document. The contractor shall thereupon and forthwith begin the works and shall regularly proceed with and complete the same on or before the date of completion stated in the work order and appendix in the contract document subject nevertheless to the provision of the extension of time limit hereinafter contained. The contractor shall submit within 7 days after receipt of the work order the program of execution of the work- week wise and shall endeavour to follow the targets. Any backlogs due to unforeseen should be made good in following week.
22. **CERTIFICATE OF VIRTUAL COMPLETION.**  
On completion of works the contractor shall remove the site all surplus materials, debris, construction waste materials etc. out of the Institute campus or dump it and level at the places indicated by the Institute at his own cost, remove the scaffoldings and dismantle any sheds he may have constructed clean the site of all dirt, oil, paints spotting, mortar spellings etc. wash the area and hand over the site clean and free from any encumbrances. The date of completion will be considered as the day on which he hands over the site as mentioned above and not when he completes the civil works. The works shall not be considered as completed until the Executive Engineer has certified in writing that they have been virtually completed after taking over the site and the defects liability period of 12 months shall commence only from the date of such certificate. The completion certificate shall indicate a) date of completion b) the defects if any to be rectified by the contractor c) items for which part payment shall be made at reduced rates if the contractor fails to comply with any of the requirements of this conditions as aforesaid, on or before the date of completion of work, the Institute may at the expense of the contractor fulfill such requirements and dispose of all the surplus materials, scaffolding materials and rubbish etc. in the manner as it thinks fit and contractor shall have no claim whatsoever in respect of such materials and will be liable to pay the amount towards expenditure incurred by the owner.
23. **DAMAGES FOR NON-COMPLETION.** If the Contractor fails to complete the work and clear the site and hand it over to the Institute before the contract or the extended date(s)/period(s) of completion, he shall without prejudice to any other right or remedy of the Institute on account of such breach, pay as compensation the sum named in the Appendix as “Liquidated Damages” for the period during which the said works shall so remain incomplete and the Institute may deduct such damages from any money due to the

contractor under this or any other contract with the Institute. The Institute may also take any or all of the following actions without assigning any reason viz. I) The Institute may remove the tenderer from its list and may debar him from participating in any further tender floated by the Institute for a particular or indefinite period. II) The Institute can terminate the contract and direct the contractor to vacate the site and get the balance work executed through any other agency and can recover the differential amount from the selected tenderer up to the quantity shown in the original schedule of works put to tender. III) The Institute can make recoveries in addition to liquidate damages from any of the amount payable to the contractor of such percentage of value of unfinished work at the time of expiry of the completion period as may be decided by the Institute subject to maximum of 10% of the above value.

24. A. **DELAY AND EXTENSION OF TIME.** The work contract allotted to any Contractor shall be required to be completed within the time so stipulated. The time Schedule given to the contractor is required to be and is essence of this contract. In case the contractor desires any extension of time due to any unavoidable circumstances beyond his control he should immediately bring it to the notice of the Executive Engineer in writing. It is explicitly made clear that labour unrest or financial difficulties shall not be considered as reasons beyond the control of the contractor. The Institute is free to take appropriate decision and on such terms and conditions it may so impose on the Contractor in case any request in writing is made for extension of time and the conditions so imposed by the Institute shall be final and binding on the contractor. The condition may include penalty compensation interest payment etc.

If in the opinion of the Executive Engineer the works be delayed.

- a) by force major or
- b) by reasons or any exceptionally incitement weather or
- c) by reasons of proceeding taken or threatened by or dispute with adjoining or neighboring owners or public authorities arising otherwise than through the contractor's own default or
- d) by reason of civil commotion, local combination of workmen or strike or lock-out affecting any of the building traders or
- e) in consequence of the contractor not having received in due time necessary instruction from the Architect/Institute for which he shall have specifically applied in writing.
- f) Any other reason which in the absolute discretion of the Executive Engineer is beyond the contractor's control the Executive Engineer may make a fair and reasonable extension of time for completion of the individual items or groups of item of works to keep the contract active recommendations / Decision of the Executive Engineer to grant such extension. If any with or without levy of compensation shall be final and binding on the contractor.

**B. ACTION FOR DELAY IN COMPLETION OF WORK**

- I) The Institute will issue work order to the selected tenderer and the conditions of the contract would come in force immediately and would be binding on the Institute and on the selected tenderer.
- II) Time taken in postal transit will be assumed to be four days and work order would be deemed to have been received by the selected tenderer by allowing the time taken in postal transit.
- III) If the tenderer fails to complete the work within the time limit mentioned in the Institute will be free to take any or all of the following actions without assigning any reason.
  - a) The Institute can remove the name of selected tenderer from the its list and can debar him from participating in any tender floated by the Institute either for an indefinite period or for a particular period.
  - b) The Institute can make recoveries from any amount payable to the selected tenderer on such percentage of the value of unfinished work at the expiry of the said time as may be decided by it.
  - c) The Institute can direct the selected tenderer to vacate the site and can get the balance work executed at the tenderer's risk and cost.

**25. VIRTUAL COMPLETION, DEFECTS LIABILITY PERIOD AND DEFECTS AFTER COMPLETION.**

The contractor will be responsible to submit a completion certificate as soon as the work is completed in all respects as per the terms and specification laid down in the contract or might have been modified in the course of execution by mutual agreement in writing. This will be verified by the Executive Engineer after taking into account the retention of money towards shrinkage etc. & final payment shall be allowed. The defects liability period will be of 12 (Twelve) calendar months from the date of completion as mentioned in the completion certificate issued by the Executive Engineer. Any defects or other faults which shall appear within the "Defects Liability Period" and which are due to materials and workmanship not being in accordance with this contract shall be verified by the Executive Engineer in schedule of defects which he shall deliver to the contractor no later than 14 days after the expiration of the said defect liability period. The Contractor shall be make good all the defects and faults specified by removing, rectifying and or reconstructing within a reasonable time after receipt of such schedule of defects and other faults entirely at his own cost and expenses notwithstanding that the same may have been in advertently passed, certified and paid for. The Executive Engineer may also whenever he considers it necessary so to do issue instructions requiring

any defect or other fault which shall appear during the construction or reconstruction or within the defects liability period which is due to materials and workmanship not in accordance with this contract to be made good by removing, rectifying and or reconstructing and the contractor shall within a reasonable time after receipt of instructions comply with the same entirely at his own cost and expenses notwithstanding that the same may have been made good he shall issue a certificate to that effect and completion of making good defects shall be deemed for all the purposes of this contract to have taken place on the day named in such certificates. In the event of the contractor failing to rectify the defects within the period as specified by the Executive Engineer in the notice issued the Institute may rectify or remove or reconstruct or re-execute the work by other means at the risk and cost of the contractor and all damages loss and expenses consequent thereon or incidental thereto shall be made good and borne by the contractor and such damage, loss and expenses shall be recoverable from him by the Institute or may be deducted by the Institute from the money due to the contractor under this or any other contract between the contractor and the Institute with a liberty to claim the balance amount if any, by resorting to means available under the provision of law. If any defective work has been done or defective materials supplied by any subcontractor employed on the works by the contractor the contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor and been subject to the provisions of this clause. The Contractor shall remain liable under the provisions of this clause notwithstanding the signing by the Executive Engineer of any certificate or passing of any accounts.

26. **CERTIFICATES AND PAYMENTS.** The contractor shall be paid by the owner from time to time by installments. The contractor has to submit a related measurement sheet in triplicate on 15<sup>th</sup> and 30<sup>th</sup> of every month for the works completed till such date. At the end of every month the contractor has to submit his R A bill together with the detailed measurement sheets, interim certificates will be issued after the measurements submitted by the contractor are checked and verified jointly by the contractor's representative, the NITIE's Engineer at site and on account of the works executed in accordance with this contract, subject however to the minimum value of the certificate that can be issued as specified in the Appendix hereto as "Minimum value of the interim certificate" and also subject to a retention of the percentage of such value named in the Appendix hereto as "Retention percentage for interim Certificates" until total amount retained shall reach the sum named in Appendix as "Total Retention Money". And the contractor shall be entitled to the payment of the Final balance in accordance with the final certificate to be issued in writing duly verified by the Executive Engineer at the expiration of the period referred to as "the defects liability period" in the appendix hereto from the date of virtual completion as soon after the expiration of such period as the work shall have been finally completed and all defects made good according to the true intent and meaning which ever shall last happen provided always that the issue of any certificate

during the progress of the works or at after their completion shall not relieve the



contractor of his liability under any clause nor relieve the contractor of his liability in case of fraud, dishonesty or fraudulent concealment relating to the work or materials or to any matter dealt within the certificate and in case of all defects and in-sufficiency's in the works or materials which a reasonable examination would not have disclosed. No certificate of the Executive Engineer shall of itself be conclusive evidence that any works or materials to which it related are in accordance with the contract Executive Engineer shall have power to withhold any certificate including the final certificate if the works or any parts thereof are not being carried out to their satisfaction and in compliance with the conditions laid down. Executive Engineer shall have powers to retain total amount or part amount of the value of any work item(s) in which defects have been pointed out to the contractor before issue of certificate and pending rectification the contractor.

27. **SECURITY DEPOSIT AND RETENTION MONEY.** The contractor shall deposit during the course of work, a sum equal to ten percentage of the value of works executed as security for due fulfillment of the contract. The security deposit will be made of initial contract Deposit and retention amount retained from R A bills of the contractor. The mode of making this deposit is as under:

Initial deposit or contract deposit: This will be in following manner.

- a) Earnest money deposit equal to amount as specified in the notice inviting tender to be paid in cash or as demand draft in name of Institute at the time of submission of Tender. On issue of the work order, the EMD of the contract who has been awarded the work will be treated as a part of ICD.
- b) The Contractor will have to deposit within fifteen days of receipt by the contractor of intimation in writing of acceptance of tender (i.e. work order) issued by the Institute an additional sum towards the initial contract deposit (ICD) such that the total amount deposited towards the ICD including the EMD will be equal to 5% of the contract amount (i.e. the awarded cost of work).

28. **Retention Amount.**

In addition to ICD an amount equal to 10% of value of the RA bill certified will be retained from each RA bill. This amount retained will be treated as a part of the Security Deposit. This amount retained from RA bill together with ICD made as aforesaid shall not exceed in the aggregate 10 (ten) percentage of the value of work carried out in such cases excess will not be refunded back to the contractor and it will not bear any interest.

The total amount so withheld from the contractor shall be termed as retention amount and shall be retained till the end of defects liability period in order to safeguard against the defects and pending claims if any against the contractor. This retention amount may be released to the contractor if he/she submit Fixed Deposit Receipt (FDR) of equal amount in favour of Director, NITIE for the entire period of defect liability.

However if in the opinion of the Executive Engineer that in order to safeguard against the defects and pending claims if any against the contractor . It is necessary to retain more than the amount retained as retention money, the said shall be done after giving due notice to the contractor in writing specifying the reasons thereof. All compensation or other sums of money payable by the contractor under the terms of this contract and or any other contract whatsoever may be deducted from this security deposit or from any other security deposits held under other contracts with the Institute or any other sums which may be due or become due to the contractor by the Institute on any account whatsoever. In event of his security deposit/retention money being reduce by reasons of any such deductions the contractor shall within 7 (seven) days of receipt of notice of demand from the Executive Engineer make good the defect. On satisfactory expiry of the defects liability period or on payment of the final bill payable in accordance with of clause 26 whichever is later the Institute on demand from the contractor refund to him the remain portion of the security deposit/retention money provided that the Executive Engineer is satisfied that there is nor demand outstanding against the contractor under this contract or any other contract.

29. **OTHER PERSONS ENGAGED BY OWNER**.- The owner reserves the right to use the premises & any portions of the site for the execution of any work not included in this Contract which he may desire to have carried out by other person & the contractor is to allow all reasonable facilities for the execution of such work but he is not required to provide any or materials for the execution of such work except by special arrangement with owner. Such work shall be carried out in such manner as not to impede the progress of the works included in the contract & the contractor is not to be responsible for any damage or delay which may happen to be occasioned by such work.

30. **INSURANCE IN RESPECT OF DAMAGE TO PERSONS AND PROPERTY.**

The contractor shall be responsible for all injury to persons, animals or things & for all structural & decorative damage to the property which may arise from the operation or neglect of himself or of any contractor's employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. This clause shall be held to include any damage to the buildings immediately adjacent to or otherwise & any damage caused to the bldg. works forming the subject of this contract by flooding, frost or other inclemency of weather. The contractor shall indemnify the owner & hold him harmless in respect of all & any expenses arising from any such injury or damage under the act of Govt. or otherwise & also in respect of any award of compensation or damages consequent upon such claim. The contractor shall reinstate all damage of every sort mentioned herein to the entire satisfactions of the owner so as to deliver up the whole of the contract work complete in every respect & so as to make good or otherwise satisfy all claims for damage to the property of third parties. The contractor shall indemnify the owner against all claims which may may be made against the owner by any member of the public or other third party in respect of anything which may arise in respect of the woks or in sequence thereof and shall at his own expense arrange to effect and maintain, until the virtual completion of the contract with an approved office a policy of insurance in the joint names of the owner &

contractor against such risks & deposit such policy or policies with the owner from time to time during the currency of this contract. The contractor shall similarly indemnify the owner against all claims which may be made upon the owner whether under the workmen's compensation act or any other status in force during the currency of this contract or at common law in respect of any employee of the contractor or any subcontractor and shall at his own expense effect and maintain, until the virtual complete on of the contract with an approved office a policy of insurance in the name of the Owner & Contractor against such risks & deposit such policy or policies with the owner from time to time during the currency of the contract. The contractor shall be responsible for anything which may be excluded from the insurance policies above referred to & also for all other damages to any property arising out of & incidental to the negligent or defective carrying out of this contract. He shall also indemnify the owner in respect of any costs, charges or expenses arising out of any claim or proceedings & also in respect of any award or compensation of damage arising therefrom. The owner shall be at liberty and is hereby empowered to deduct the amount of any damage compensation, costs, charges & expenses arising or accruing from or in respect of any such claim or damage from any sums due or to become due to the contractor.

31. **FIRE INSURANCE.** The contractor shall at the time of signing the contract insure the works & keep them insured until the virtual completion of the contract against loss or damage by fire with approved Govt. Insurance Co. in the joint names of the owner & contractor ( the name of the former being placed first if called in the Policy) for the full amount of contract and for any further sum if required to do so by the owner the premium of such further sum being allowed to the contractor as an authorized extra. Such policy shall cover the property of the owner only, fees by for assessing the claim & in connection with his services generally therein & shall not cover any property of the contractor or of any subcontractor or employee. The contractor shall deposit the policy and receipt for the premises with the owner within twenty one days from the date of signing the contract unless otherwise instructed by the owner. In default of the contractor insuring as provided above the owner may so insure and may deduct the premium paid from any money due or which may become due to the contractor.

32. **TERMINATION OF CONTRACT BY OWNER.**

If the contractor being an individual or a firm commit any "Act of Insolvency". Or shall be adjudged an insolvent or being an incorporated company shall have an order for company winding up made against it or pass an effective resolution for winding up voluntarily or subject the supervision of the Court and of the official assistance of the Liquidator in such acts of insolvency or wing up shall be unable within seven days after notice to him requiring him to do so, to show to the reasonable satisfaction of the Executive Engineer that he is able to carry out and fulfill the contract and give security therefore, if so required by the owner.

Or if the contractor ( whether an individual, firm, incorporated company ) shall suffer execution to be issued or shall suffer any payment under this contract to be attached by or

on behalf of any of the creditors of the contractor.

Or shall assign or sublet this contract without the consent in writing of the Institute first obtained.

Or shall charge or encumber this contract or any payments due or which may become due to the contractor hereunder.

Or if the owner is satisfied that the contractor 1) has abandoned the contract or 2) has failed to commence the works or has without any lawful excuse under these conditions suspended the progress of the work for 14 days after receiving from the Executive Engineer written notice to proceed 3) has failed to remove materials from the site or to pull down and replace work for seven days after receiving from the Executive Engineer under these conditions. 4) has neglected or failed persistently to observe the perform all or any of the acts, matters or things by this contract to be observed and performed to the contractor for seven days after written notices shall have been given to the contractor requiring the contractor observe or perform the same or has to the detriment of the good workmanship or in defiance of the Executive Engineer instructions to the contrary sub let any part of the contract.

Often and any of the said cases the Institute may notwithstanding any previous waiver after giving seven days notice in writing to the contractor terminate the contract forthwith. The obligations and liabilities of the contract the whole of which shall have been so terminated and as if the works subsequently executed had been executed by or on behalf of the contractor. And further the Institute may enter upon and take possession of the works and all plant, tools, scaffoldings, sheds, machinery, steam & other power utensils and material lying on the premises or may employ the same by means of his own servants and workman in carrying on and completing the works or by employing any other contractors or other persons to complete the works or by employing any other contractors or other persons to complete the works and the contractor shall not in any way interrupt or do any act matter or thing to prevent or hinder such other contractor or other person or persons employed for completing and finishing or using the materials and plant for the works. When the works shall be completed or as soon thereafter as convenient the owner shall give a notice in writing to the contractor to remove his surplus materials and plant and should the contractor fails to do so within a period of 4 days after receipt thereof by him the owner shall give a notice in writing to the contractor fails to do so for a period of 14 days after receipt thereof by him, the owner shall sell the same by public auction and it give credit to the contractor for the amount so realized after adjusting the expenses so incurred in subject thereof. The Executive Engineer shall thereafter ascertain and certify in writing under his hand what (if thing) shall be due or payable by the owner for the value of the said plant and materials so taken the concession of by the owner and the expense or loss which the owner shall have been put to in procuring the works to be completed and the amount if any, owing to the contractor and the amount which shall be so certified shall thereupon be paid by the owner to the contractor or by the contractor to the owner as the case may be and the certificate of the Executive Engineer shall be final and conclusive between the parties.

33. **TERMINATION OF CONTRACT BY CONTRACTOR.** The payment of the amount payable by the Owner shall be in arrears and up-paid for thirty days after notice in writing requiring payment of the payment as aforesaid shall have been given by the contractor to the owner or if the owner interferes with or acts the issue of any such certificate or the owner commits any "Act of Insolvency" or if the owner going on individual or firm) shall be adjudged insolvent or ( being an incorporated company) shall have an amount made against him or pass an effective Resolution for winding up either compulsorily or subject to the revision of the court or voluntarily, or if the official Assignee or the Liquidator in any such winding up shall be able within fifteen days after notice to him requiring him so to do, to show to the reasonable satisfaction of contractor that he is able to carry out and fulfill the contract and to make Contractor, to give security of or if the works be stopped for all payments due and to become due there under and, if required by or by injunction or other order of any court of law, then and in any of the said cases the contractor shall be at liberty to determine the contract by notice in writing to the owner and he shall be entitled to recover from the owner payment for all works duly executed and for any loss he may sustain upon any plant or materials supplied or purchased or prepared for the purpose of the contract. In arriving at the amount of such payment the net rates contained in the contractor's original tender shall be followed, or where the same may not apply valuation shall be made in accordance with clause 17 hereof .

**ADHRENCE TO LABOUR LAWS**

- a) The Contractor shall obtain a valid license under the Contract LABOUR (R & A) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfill this requirement shall attract the panel provisions of the Contract arising out of the resultant non-execution of the work.
- b) The Contractor shall not employ in connection with Work any persons who is below eighteen years of age. Contractor shall employ labour in sufficient numbers to maintain the required rates of progress and quality to the satisfaction of the Engineer -In- charge.
- c) The Contractor shall comply with or cause to be complied with the Contractors Labour Regulations in regard to all matters provided therein and shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as defined in the Contractor's Labour Regulations as appended which shall also include the provisions of the contract labour(Regulations and Abolition) Act 1970 and Contract labour ( Regulations & Abolition ) Central Rules 1971 wherever applicable.
- d) The contractor shall be liable to pay his contribution and the employees' contribution to the State Insurance Scheme in respect of all labour employed by him for the execution of the Contract, in accordance with the provision of the Employees State Insurance Act, 1948 as amended from time to time. In case the Contractor fails to submit full details of his account of labour employed .

**SPECIAL CONDITIONS OF CONTRACT**

- 1) The entire work shall be carried out under the supervision of the staff person employed by NITIE.
- 2) The contractor shall take into consideration the relevant standard Specifications of PWD or ISI coded required for the above referred work and entire work shall be carried out as per the relevant standard specifications or PWD or ISI codes and bye-laws and to the satisfaction of the Executive Engineer or his representative.
- 3) The necessary arrangement for water electricity for the purpose of execution of this contract shall be made by the contractors without any additional cost. If the same is supplied by the Institute the cost of supply of water and electricity will be deducted from the contractor's running bill (water charge will be 1% of the cost of water consuming items and electricity at the rate of Rs.6/- per unit of consumption) The contractor has to submit separate applications for getting above facilities from NITIE.
- 4) NITIE shall not supply cement to the contractor at NITIE stores and the contractor will have to make their own arrangement to get the cement issued from the go-down, load transport to the site of work and unload the same at their own cost and expenses. The contractors should make their own arrangement to store the cement at their site or work. The contractor will not be allowed to take surplus cement out of NITIE campus and will have to return the same to NITIE go-down at his own cost. Empty cement bags will be property of the contractor.
- 5) The items involving hidden measurement should be executed only after specific approval obtained in writing from the Institute Authorized representative. On confirmation to execute such items the agency has to submit the detailed measurements with locations and then only the work to be executed. If the agency fails to submit such detailed measurements before executing the item, decision of the Institute's Authorized representative will be final & binding on the contractor.
- 6) No work shall be carried out on the Institute holidays (including Sat/Sun & other holidays) The work shall be executed during working hrs. of Institute on working days only. For execution of works on holidays/beyond office hrs. specific approval should be obtained by the agency. The permission will be given at the discretion of the Institute Authority. No request for extension of time on this issue will be entertained.
- 7) Earnest money deposit may be accepted by the Institute also in form of fixed deposit receipt in favour of the Institute.

- 8) All the works are to be carried out as per relevant IS specifications/PWD red book specifications or as per instructions issued from time to time by Executive Engineer or his authorized representative. The work is to be carried out as per specific requirement.

The quotation for the work shall remain open for a period of 180 days from the date of opening of quotations. The Institute shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money if any tenderer withdrawn his tender before the said period or makes any modification in the terms and conditions of the tender which are not acceptable to the department and to forfeit the whole of the earnest money if the tenderer whose tender is accepted fails to commence the work specified in the NITIE (along with changes in the scope, if any) within fifteen days of issue of work order or abandons the work before its completion.

### **GENERAL SPECIFICATION**

**NOTE:** The construction work shall generally include the work as per general specification hereunder and as mentioned in the schedule of quantities and rates of this contract but not necessarily limited to the same. The general specification may or may not contain the description of some or all the items in the schedule of quantities and rates of this contract. However the work has to be executed as per the standard specifications of PWD as mentioned in their red book and as per relevant Indian standard specifications. The contractor shall execute all incidental works necessary for due execution and completion of work item.

The description given in schedule of items bill of quantities is a brief description and may not cover the entire description of the work item. For detail specifications refer the standard specifications of PWD /CPWD. The relevant item Nos. and codes of the items have been given in the schedule of items/ bill of quantities. The work has to conform to these standard specifications as mentioned above. A copy of the standard specification is available for reference in the Estate department of NITIE.

## **1. PAINTING:**

### **1.1 SCOPE OF WORK:**

The work covered under these specifications consist of furnishing the various types of paints and also the workmanship for these items, in strict compliance with these specifications, which are given in detail here-in-after with the item of schedule of quantities.

### **1.2 MATERIALS:**

Paints, oils, varnishes etc. of approved brand and manufacture shall be used. Ready mixed paints as received from the manufacturer without any admixture shall be used.



If for any reason, thinning is necessary in case of ready mixed paint, the brand of thinner recommended by the manufacturer or as instructed by the Engineer-in-Charge shall be used. Approved paints, oils or varnishes shall be brought to the site of work by the contractor in their original containers in sealed condition. The materials shall be brought in at a time in adequate quantities to suffice for the whole work or at least a fortnights work. The materials shall be kept in the joint custody of the contractor and the Engineer-in-charge. The empties shall not be removed from the site of work, till the relevant item of work has been completed and permission obtained from the Engineer in-Charge.

The contractor shall associate the chemist of paint manufacturers before commencement of work, during and after the completion of work who shall certify the suitability of the surface to receive painting and the paint before use etc.

### **1.3 COMMENCING WORK :**

**Scaffolding :** Wherever scaffolding is necessary, it shall be erected on double supports tied together by horizontal pieces, over which scaffolding planks shall be fixed. No ballies, bamboos or planks shall rest on or touch the surface which is being painted.

Where ladders are used, pieces of old gunny bags shall be tied on their tops to avoid damage or scratches to walls.

For painting of the ceiling, proper stage scaffolding shall be erected.

Painting shall not be started until and unless the Engineer-in-Charge has inspected the items of work to be painted, satisfied himself about their proper quality and given his approval to commence the painting work.

Painting, except the priming coat, shall generally be taken in hand after all other builders work, practically finished.

The rooms should be thoroughly swept out and the entire building cleaned up at least one day in advance of the paint work being started.

### **1.4 PREPARATION OF SURFACE:**

The surface shall be thoroughly cleaned. All dirt, rust, scales, smoke and grease shall be thoroughly removed before painting is started. Minor patches if any in plastered/form finished surfaces shall be repaired and finished inline and level in C.M. 1:1 and cracks & crevices shall be filled with approved filler, by the contractor at no extra cost to the Department. The prepared surface shall have received the approval of the Engineer-in-Charge after inspection, before painting is commenced.

### **1.5 APPLICATION:**

Before pouring into smaller containers for use, the paint shall be stirred thoroughly in its containers. When applying also, the paint shall be continuously stirred in the smaller containers so that consistency is kept uniform.

The external surfaces of the buildings under reference including the R.C.C. Jalli, fins and the panels above and below the window etc. shall be finished in different colours of approved

shade. The contractor will make suitable samples at site for Departments approval before taking up the work in hand and they will be allowed to proceed with the work only after getting Departments approval for the same.

The painting shall be laid on evenly and smoothly by means of crossing and laying off, the later in the direction of the grain in case of wood. The crossing & laying off consists of covering the area with paint, brushing the surface hard for the first time and then brushing alternately in opposite directions two or three time and then finally brushing lightly in direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying will constitute one coat.

Where so stipulated, the painting shall be done with spraying. Spray machine used may be (a) a high pressure (small air aperture) type or (b) a low pressure (large air gap) type, depending on the nature and location of work to be carried out. Skilled and experienced workmen shall be employed for this class of work. Paints used shall be brought to the requisite consistency by adding a suitable thinner. Spraying should be done only when dry condition prevails.

Each coat shall be allowed to dry out thoroughly and rubbed smooth before the next coat is applied. This should be facilitated by thorough ventilation.

Each coat except the last coat, shall be lightly rubbed down with sand paper or fine pumice stone and cleaned of dust before the next coat is laid.

No left over paint shall be put back into the stock tins. When not in use, containers shall be kept properly closed.

The final painted surface shall present a uniform appearance and no streaks, blisters, hair marks from the brush or clogging of paint puddles in the corners of panels, angles of mouldings etc. shall be left on the work.

In case of cement based paints/primers, the absorbent surfaces shall be evenly damped so as to give even suction. In any weather, freshly painted surfaces shall be kept damp for at least two days.

In painting doors and windows, the putty around the glass panes must also be painted, but care must be taken to see that no paint stains etc. are left on the glass. Tops of shutters and surfaces in similar hidden locations shall not be left out while painting. Perspect covers of electrical switch boxes have to be painted from inside by removing them. Care shall be taken while removing them in position after painting with respective approved paints. In painting steelwork, special care shall be taken while painting over bolts, nuts, rivets, overlaps etc.

The additional specifications for primer and other coats of paints shall be as in accordance to the detailed specifications under the respective headings.

Any damage caused during painting work to the existing works/surfaces shall be made good by the contractor at his own cost.

## **1.6 BRUSHES AND CONTAINERS :**

After work, the brushes shall be completely cleaned off paint and linseed oil by rinsing with turpentine. A brush in which paint has dried up is ruined and shall on no account be used for

painting work. The containers, when not in use, shall be closed, kept air tight and shall be kept at a place free from dust. When the paint has been used, the containers shall be washed with turpentine and wiped dry with soft clean cloth, so that they are clean & can be used again.

### **1.7 MEASUREMENT :**

- a) Painting, unless otherwise stated shall be measured by area in square metre. Length and breadth shall be measured correct upto two places of decimal of a metre.
- b) No deduction shall be made for opening not exceeding 0.05 sqm. and no addition shall be made for painting to the beading, moulding edges, jambs, soffits, sills, architraves etc. of such openings.
- c) In measuring painting, varnishing, oiling etc. of joinery and steel work etc., the Co-efficient as in the following table shall be used to obtain the areas payable. The Co-efficient shall be applied to the areas measured flat and not girthed in all cases.
- d) In case of painting of door shutter with push plates in plastic laminate, deduction will be made for area of such laminations.

**1.7.1** Table of multiplying Co-efficient to be applied over areas of different surfaces to get equivalent plain areas is given in the Appendix-“C-2” of this book.

### **1.7.2 Explanatory notes on the table of Co-efficient.**

- 1. Where doors, window etc. are of composite types other than those included in para 47.7 (c), the different portions shall be measured separately with their appropriate Co-efficient, the centre line of the common rail being taken as the dividing line between the two portions.
- 2. Measurements for doors, windows etc. shall be taken flat (and not girthed) over all including chowkhats or frames, where provided. Where chowkhats or frames are not provided, the shutter measurements shall be taken.
- 3. Collapsible gates shall be measured for width from outside to outside of gate in its expanded position and for height from bottom to top of channel verticals. No separate measurements shall be taken for the top and bottom guide, rails, rollers, fittings etc.
- 4. Rolling shutters of interlocked laths shall be measured for the actual shutter width and the height from bottom of opening to the centre of the shaft. No separate measurements shall be taken for painting guides and other exposed features within or outside the shutter area. The painting of top cover or hood shall however be measured separately.

5. Co-efficient for sliding doors shall be the same as for normal types of doors as mentioned in the table. Measurements shall be taken outside of shutters, and no separate measurements shall be taken for painting guides, rollers, fittings etc.
6. Measurement of painting of doors, windows, collapsible gates, rolling shutters etc. as above shall be deemed to include painting all iron fittings in the same or different shade for which no extra will be paid.
7. The measurements as above shall be deemed to include also the painting of edges, blocks, cleats etc. for which no extra will be paid.
8. The co-efficient for doors and windows shall apply irrespective of the size of frames and Shutter members.
9. When the two faces of a door, window etc. are to be treated with different specified finishes, measurable under separate items, the edges of frames and shutters shall be treated with the one or the other type of finish as ordered by the Engineer-in-Charge, and measurement of this will be deemed to be included in the measurement of the face treated with that finish.
10. In the case where shutters are fixed on both faces of the frames, the measurements for the door frame and shutter on one face shall be taken in the manner already described, while the additional shutter on the other face will be measured for the shutter area only excluding the frame.
11. Where shutters are provided with clearance at top or/and bottom, such openings shall be deducted from the overall measurements and relevant co-efficient shall be applied to obtain the area payable.
12. In case of trellis (or jaffri) work, the measurements shall include the painting of the frame member for which no separate measurements shall be taken. Trellis door or window shutters shall also be measured under trellis work.
13. Wherever air conditioning grill, lighting, fixtures etc. in false ceiling are painted along with, measurements shall be taken over all without deductions for opening in grills and no extra shall be paid for the grills. If grills, fixtures etc. are not painted, area of fixtures or grills as measured flat (not girthed) shall be deducted when it exceeds 0.05sqm. Individuals. Where walls and ceilings are painted in separate colours, the junctions of two paints shall be brought down on the walls in a straight line by about 6mm to 12mm. if so desired, if the junctions of walls and ceilings are not even. Nothing extra shall be paid to the contractor on this account. Beading wherever provided shall not be measured separately but shall be deemed to be included in the area of false ceiling etc. measured flat (not girthed).
14. For painting open palisade fencing and gates etc., the height shall be measured from the bottom of the lowest rail, if the palisades do not go below it, (or from the lower end of the palisades, if they project below the lowest rail), upto the top of rails or palisades whichever are higher, but not up to the top of standards when the latter are higher than the top rails or palisades.

15. In the case of asbestos cement corrugated or semi-corrugated sheeting and iron corrugated sheeting in roofs, side cladding etc., the work shall be measured flat (not girthed) as fixed.
16. For trusses, compound girders, stanchions, lattice girder and similar work, actual areas will be measured in sqm. and no extra shall be paid for painting on bolt heads, nuts, washers etc. even when they are picked out in a different tint to the adjacent work.
17. Painting of rain water, soil, waste, vent and water pipes etc. shall be measured in running metres of the particular diameter of the pipe concerned. Painting of specials such as bends, heads, branches, junctions, shoes etc. shall be included in the length and no separate measurements shall be taken for these or for painting brackets, clamps etc.
18. Measurements of wall surfaces and wood and other works not referred to already shall be recorded as per actual and opening exceeding 0.05 sqm. shall be deducted to get the net payable area. Length and breadth shall be measured correct upto two places of decimal of a metre and area so worked out shall be correct upto two places of decimal of a square metre.
19. In case the items of work requiring painting are inclusive of cost of painting, the painting carried out shall not be measured separately.

### **1.8 PRECAUTIONS:**

All furniture's, lightings, fixtures, sanitary fittings, glazing, floors etc. shall be protected by covering and stains, smears, splashing, if any shall be removed and any damage done shall be made good by the contractor at his cost.

### **1.9 RATES:**

Rates shall include cost of all labour and materials involved on all the operations described above and in the particular specifications given under the several items.

### **1.10 (A) PAINTING PRIMING COAT ON WOOD, IRON OR PLASTERED SURFACES :**

#### **1.10.1 Primer**

1. The primer for wood work, iron work or plastered surface shall be as specified in the description of the item.
2. **Primer for Wood work / Iron & Steel / Plastered / Aluminum surfaces shall be as specified below:**

SN	SURFACES	PRIMER TO BE USED
a	Wood work (hard & soft wood):	Pink conforming to I.S.3536-1966
b	Resinous wood and ply wood:	Aluminum primer
c	Iron & Steel, Aluminum and galvanized Steel	Zinc chromate primer conforming to
d	Plastered surfaces, cement brick work, Asbestos	Cement Primer

3. The primer shall be ready mixed primer of approved brand and manufacture.

#### **1.10.2 Preparation of surface :**

**a) Wood work :** The wood work to be painted shall be dry and free from moisture.

The surface shall be thoroughly cleaned. All unevenness shall be rubbed down smooth with sand paper and shall be well dusted. Knots, if any, shall be covered with preparation of red lead made by grinding red lead in water and mixing with strong glue sized and used hot. Appropriate filler material with same shade as paint shall be used where so desired by the Engineer-in-charge.

The surface treated for knotting shall be dry before painting is applied. After the priming coat is applied, the holes and indentation on the surface shall be stopped with glaziers putty or wood putty (for specifications for glaziers putty and wood putty- refer as mentioned here-in-before). Stopping shall not be done before the priming coat is applied as the wood will absorb the oil in the stopping and the latter is therefore liable to crack.

**(b) Iron and Steel Work :** All rust and scales shall be removed by scrapping or by brushing with steel wire brushes. Hard skin of oxide formed on the surface of wrought iron during rolling which becomes loose by rusting, shall be removed.

All dust and dirt shall be thoroughly wiped away from the surface.

If the surface is wet, it shall be dried before priming coat is undertaken.

**(c) Plastered Surface:** The surface shall ordinarily not be painted until it has dried completely. Trial patches of primer shall be laid at intervals and where drying is satisfactory, painting shall be taken in hand. Before primer is applied, holes and undulations shall be filled up with plaster of paris and rubbed smooth.

**1.10.3 Application :** The primer shall be applied with brushes, worked well into the surface and spread even and smooth. The painting shall be done by crossing and laying off as described here-in-before.

**1.10.4 Other Details :** The specifications for Painting (General) shall hold good so far as it is applicable.

#### **1.11 (B): PAINTING WITH SUPERIOR QUALITY & FLAT OIL READY MIXED PAINTS ON NEW SURFACE:**

**1.11.1 Paint :** Ready mixed paints shall be of approved brand and manufacture and of the required shades. They shall conform in all respects to the relevant I.S. specifications.

#### **1.11.2 Preparation of Surface:**

**(a) Wood work:** The surface shall be cleaned and all unevenness removed as in para 1.10.2 (a). Knots if visible, shall be covered with a preparation of red lead. Holes and indentations on the surface shall be filled in with glaziers putty or wood putty and rubbed smooth before painting is done. The surface should be thoroughly dry before painting.

(b) **Iron and steel work :** The primer coat shall have dried up completely before painting is started. Rust and scaling shall be carefully removed by scraping or by brushing with steel wire brushes. All dust and dirt shall be carefully and thoroughly wiped away.

(c) **Plastered surfaces:** The priming coat shall have dried up completely before painting is started. All dust or dirt that has settled on the priming coat shall be thoroughly wiped before painting is started.

**1.11.3 Application:** The specifications mentioned here-in-before shall hold good as far as applicable.

The number of coats to be applied will be as stipulated in the item. The painted surface shall present a uniform appearance and glossy/semi glossy finish, free from streaks, blisters etc.

**1.11.4 Other details:** The specifications for Painting (General) specified here-in-before shall hold good in so far as they are applicable.

### **1.12 (C) PAINTING WITH SYNTHETIC ENAMEL/SEMI GLOSSY PAINT ON NEW WORK :**

1. **Paint:** Synthetic enamel/semi glossy paint of approved brand and manufacture and required shade shall be used for the top coat and an under coat of shade to match the top coat as recommended by the manufacturer shall be used. The paint shall be conforming to IS : 1932-1964.

2. **Preparation of Surface:** This shall be as per painting with superior quality ready mixed paint as mentioned here- in- before.

3. **Application:** The number of coats including the under coat shall be as stipulated in the item.

3.1 Under Coat: One coat of the specified paint of shade suited to the shade of the top coat shall be applied and allowed to dry over night. It shall be rubbed next day with the finest grade of wet abrasive paper to ensure a smooth and even surface free from brush marks and all loose particles shall be dusted off. All the cracks, crevices, roughness etc. will be filled with approved putty as per manufacturer's recommendations.

3.2 Top Coat: Finishing coats of specified paint of the desired colour & shade shall be applied after the undercoat is thoroughly dried. Additional finishing coats shall be applied if found necessary to ensure a proper and uniform semi glossy surface.

4. **Other Details:** The specifications for "Painting (General)" mentioned here-in-before shall hold good as far as they are applicable.

### **1.13 (D) PAINTING WITH ACRYLIC EMULSION/PLASTIC EMULSION PAINT.**

1. This shall be polyvinyl based Acrylic/plastic emulsion paint of approved manufacture of the required shade, conforming to I.S.5411-1969.

2. **Primer:** The primer to be used for the painting with acrylic emulsion on cement concrete surfaces, plastered surfaces, A.C. sheets, timber and metal surfaces, if necessary, shall be of approved base and as per recommendations of the manufacturers.

3. Putty : Plaster filler to be used for filling up (putting) uneven surfaces, small cracks and holes etc. shall be of approved compound and as per recommendations of the manufacturers. No oil based putty shall be used. The putty should be made from a mixture of whiting and plastic emulsion paint or as per manufacturers recommendations.

4. Finishing coats : All the finishing coats shall be of matt finish or any other finish as required by the Engineer in-charge. The number of finishing coats shall be as specified in the item.

#### **MODE OF MEASUREMENT:**

All the measurements for payment shall be taken on net surface area actually painted, unless otherwise specified. Deduction will be made from the areas for fixtures, grills, ventilation, outlets, electrical boxes and such obstructions not painted, if they are individually more than 0.05 sqm.

#### **JOB REQUIREMENTS:**

i) Acrylic emulsion paint is required to be provided on plastered and concrete surfaces in portions of the building. The Department shall reserve the option to delete or increase quantities in full or part from the scope of contract during progress of work.

ii) All wood surfaces are to be painted with semi glossy synthetic enamel paint with an approved primer.

iii) All shades and colours of paints shall be subjected to review and prior approval of Engineer-in-Charge shall be taken before the application.

### **1.14 WHITE WASHING WITH LIME**

**1.14.1 Preparation of Surface:** Before new work is white washed, the surface shall be thoroughly brushed free from mortar droppings and foreign-matter.

In the case of old work, all loose pieces and scales shall be scrapped off and holes in plaster as well as patches of less than 0.05 sqm. area each shall be filled up with mortar of the same mix. Where so specifically ordered by the Engineer-in-charge, the entire surface of old white wash shall be thoroughly removed by scrapping and this shall be paid for separately.

**1.14.2 Preparation of lime wash :** The wash shall be prepared from fresh stone white lime “Katani” or equivalent. The lime shall be thoroughly slaked on the spot, mixed and stirred with sufficient water to make a thin cream. This shall be allowed to stand for a period of 24 hours and then shall be screened through a clean coarse cloth. 40 gm. of gum dissolved in hot water, shall be added to each 10 cubic decimeter of the cream. The approximate quantity of water to be added in making the cream will be 5 litres of water to one kg. of lime.

Indigo (Neel) up to 3 gm. per kg. of lime dissolved in water, shall then be added and wash stirred well. Water shall then be added at the rate of about 5 ltrs. per kg. of lime to produce a milky solution.



The lime shall be tested in a chemical laboratory and test certificate submitted, to conform the quality of lime with regard to its physical and chemical properties. The cost of testing lime shall be borne by the contractor.

**1.14.3 White Washing ``:** The white wash shall be applied with brushes or by spray in the specified number of coats. The operation for each coat in the case of brush application shall consist of a stroke of the brush given from the top downwards, another from the bottom upwards over the first stroke, and similarly one stroke horizontally from the right and another from the left before it dries.

Each coat shall be allowed to dry before the next one is applied. Further each coat shall be inspected and approved by the Engineer-in-charge before the subsequent coat is applied. No portion of the surface shall be left out initially to be patched up later on.

For new work, three or more coats shall be applied till the surface present a smooth and uniform finish through which the plaster does not show. The finished dry surface shall not show any sign of cracking and peeling nor shall it come off readily on the hand when rubbed.

For old work, after the surface has been prepared as described here-in-before, a coat of white wash shall be applied over the patches and repairs. Then a single coat or two or more coats of white wash as stipulated in the description of the item shall be applied over the entire surface. The white washed surface should present a uniform finish through which the plasters patched do not appear. The washing on ceiling should be done prior to that on walls.

**1.14.4 Protective Measures:** Doors, windows, floors, articles of furniture etc. and such other parts of the building not to be white washed shall be protected from being splashed upon. Splashing and droppings, if any, shall be removed by the contractor at his own cost and the surfaces cleaned. Damages if any to painted surfaces, furniture's or fittings and fixtures etc. shall be recoverable from the contractor.

**1.14.5 Measurements :** All measurements for payment shall be taken on net surface areas actually whitewashed, unless otherwise specified. Deductions will be made from the areas for fixtures, grills, ventilation, outlets, electrical boxes and such obstruction not painted if they are individually more than 0.05 sqm. Length and breadth shall be taken correct upto two places of decimal of a metre and areas so worked out shall be correct upto two places of decimals of a square metre.

Corrugated surfaces shall be measured flat as fixed and the area so measured shall be increased by the following percentages to allow for the girthed area.

Corrugated asbestos cement sheets	20%
Semi-corrugated asbestos cement sheets:	10%

The number of coats of each treatment shall be stated. The item shall include removing nails, making good holes, cracks, patches etc. not exceeding 0.05 sqm. each with materials similar in composition to the surface to be prepared.

**1.14.6 Rate:** The rate shall include the cost of all materials and labour involved in all the operations described above.

**1.15 COLOUR WASHING:**

In the case of colour washing, mineral colours, not affected by lime, shall be added to white wash with proper glue. No colour wash shall be done until a sample of the colour wash to the required tint or shade has been got approved from the Engineer-in-Charge. The colour shall be of even tint or shade over the whole surface. If it is patchy or otherwise badly applied, it shall be redone by the contractor, at no extra cost to the Department.

For new work, the priming coat shall be of white wash lime or with whiting as specified in the description of the item. Two or three coats, shall then be applied as specified on the entire surface till it represents a smooth and uniform finish. Each coat after applying shall be got approved from the Engineer-in-Charge.

The finished dry surface shall not be powdery and shall not readily come off on the hand when rubbed.

Other specifications as detailed for Whitewashing with lime shall be applicable. Indigo (Neel) shall however, not be added.

**1.16 DRY DISTEMPERING:**

**(a) Distemper:** Dry distemper (IS:427-1965) of approved brand and manufacture, colour and required shade shall be used. The dry distemper shall be stirred slowly in clean water using 0.6 litre of water per kg. of distemper or as specified by the manufacturers. Warm water shall preferably be used. It shall be allowed to stand for at least 30 minutes before use. The mixture shall be invariably well stirred before and during use to maintain an even consistency.

**(b) Preparation of surface:** This shall be as for Painting work mentioned here-in-before in so far as it is applicable.

**(c) Application:** In case of new work, the treatment shall consist of a priming coat followed by the application of two or more coats of distemper till the surface shows an even colour.

i) **Priming coat** : Priming coat of whiting shall be applied over the prepared surface. The whiting (ground white chalk) shall be dissolved in sufficient quantity of warm water and thoroughly stirred to form a thin slurry which shall then be screened through a clean coarse cloth. Two kg. of gum and 0.4 kg. of copper sulphate dissolved separately in hot water shall be added for every cum. of the slurry which shall then be diluted with water to the consistency of milk so as to make a wash ready for use. No white washing coat shall be used as a priming coat for distempering.

ii) The application of each coat as mentioned in the specifications for painting (General) here-in-before, shall hold good, as far as it is applicable.

**1.17 OIL EMULSION (OIL BOUND) DISTEMPERING:**

**(a) Oil bound distemper** (IS:428-1969) of approved brand and manufacture, colour and required shade shall be used. The primer where used as on new work shall be cement primer or distemper primer as specified in the item. These shall be of the same manufacture as distemper. The distemper shall be diluted with water or any other prescribed thinner in a

manner recommended by manufacturer. Only sufficient quantity of distemper required for days work shall be prepared.

(b) Preparation of surfaces: The surface shall be prepared as described here- in- before for Painting work in so far as it is applicable and approved putty/filler shall be applied to the entire area to get uniform and smooth surface before application of primer.

Application: The cement primer or distemper primer shall be applied by brushing and not by spraying. Hurried priming work shall be avoided, particularly on absorbent surfaces. New plaster patches in old work before applying oil bound distemper shall be treated with cement primer/distemper primer. The surface shall be finished as uniformly as possible leaving no brush marks. Priming coat shall be allowed to dry for at least 48 hours before oil bound distemper is applied. Before applying distemper, the surface shall be lightly sand prepared to make it smooth for receiving the oil bound distemper, taking care not to rub out the priming coat. A time interval of at least 24 hours shall be allowed between consecutive coats to permit the proper drying of the preceding coat. Two or more coats of distemper as are found necessary shall be applied over the priming coat to obtain an even shade.

c) Other details: The specifications for “Painting (General)” mentioned here-in-before shall hold good as far as it is applicable.

#### **1.18 WATER PROOFING CEMENT BASED PAINT :**

**a) Material:** Cement based paint (IS:541 0-1 969) of approved manufacture, quality, shade and colour only shall be used.

**b) Preparation of surfaces:** The surface shall be thoroughly cleaned off all mortar dropping, dirt, dust, algae, grease and other foreign matter by brushing and washing the surfaces. The surface shall be thoroughly wetted with clean water before the water proof cement paint is applied. The prepared surface shall be got approved before painting is commenced.

The water proof cement paint shall be mixed in such quantities as can be used up within an hour of its mixing as otherwise the mixture will set and thicken, affecting flow and finish.

Water proof cement paint shall be mixed with water in two stages. The first stage shall comprise of 2 parts of water proof cement paint and one part of water stirred thoroughly and allowed to stand for 5 minutes. Care shall be taken to add the water proof cement paint gradually to the water and not vice versa. The second stage shall comprise of adding further one part of water to the mix and stirring thoroughly to obtain liquid of workable and uniform consistency. In all cases the manufacturer’s instruction shall be followed meticulously.

**c) Application:** The solution shall be applied on the clean and wetted surface with brushes or spraying machine. The solution shall be kept well stirred during the period of application. To avoid direct heat of the sun during painting, the cement based paint shall be applied on the surface which is on the shady side. Cement based paint shall not be applied on the surfaces already treated with white wash, colour wash, dry or oil bound distemper, varnishes, paints etc. It shall not be applied on gypsum, wood and metal surfaces.

**d) Other details :** The specifications for Painting (General) mentioned here-in-before shall hold good as far as they are applicable.

e) **Mode of measurement for dry distemper, oil bound distemper and water proof cement paint :** All measurement for payment shall be taken on net surface area actually painted unless otherwise specified and no co-efficient shall be applied for working out areas. Deductions will be made from areas for opening/obstructions not painted, if they are individually more than 0.05 sqm. Length and breadth shall be taken correct upto two places of decimal of a meter and areas shall be worked out correct upto two places of decimal of a square meter.

Corrugated surfaces shall be measured flat as fixed and the area so measured shall be increased by the following percentage to allow the girthed area: a) Corrugated asbestos cement sheets - 20%; b) Semi corrugated asbestos cement sheets - 10%.

The number of coats of each treatment shall be stated in the schedule of quantities. The whole surface shall be applied with approved putty/filler to get uniform and smooth surface at no extra cost to the Department.

**Rates:** The rate shall include cost of all materials and labour involved in all the operation described above.

### **1.19 BEES WAXING OR POLISHING WITH READY MADE WAX POLISH:(NEW WORK):**

**1.19.1 Materials:** The polishing shall be done with bees waxing prepared locally or with readymade wax polish of approved brand and manufacture, as stipulated in the description of item.

a) Where bees waxing are to be prepared locally, the following specifications for the same shall apply:

Pure bees wax free from paraffin or stearin adulterants shall be used. Its specific gravity shall be 0.965 to 0.969 and melting point shall be 63°C. The polish shall be prepared from a mixture of bees wax, linseed oil, turpentine and varnish in the ratio of 2: 1 : 0.5 by weight.

The bees wax and boiled linseed oil shall be heated over a slow fire. When the wax is completely dissolved, the mixture shall be cooled till it is just warm and turpentine and varnish added to it in the required proportions and the entire mixture shall be well stirred.

**1.19.2 Preparation of surface :** Preparation of surface will be as mentioned here-in-under para 1.20.2 with the exception that knotting, holes and cracks shall be stopped with a mixture of fine saw dust formed of the wood being treated, beaten up with sufficient bees wax to enhance cohesion.

**1.19.3 Application:** The polish shall be applied evenly with a clean soft pad of cotton cloth in such a way that the surface is completely and fully covered. The surface is then rubbed continuously for half an hour.

When the surface is quite dry, a second coat shall be applied in the same manner and rubbed continuously for one hour or until the surface is dry.

The final coat shall then be applied and rubbed for two hours (more if necessary) until the surface has assumed uniform gloss and is dry showing no sign of stickiness.

The final polish depends largely on the amount of rubbing which should be continuous and with uniform pressure, with frequent changes in the direction.

**1.19.4 Other details :** The specifications for painting (General) as mentioned here-in-before shall hold good as far as they are applicable.

#### **1.20 FRENCH SPIRIT POLISHING: (ON NEW WORK WITH A COAT OF WOOD FILLER) :**

**1.20.1 Polish:** Pure shellac varying from pale orange to lemon yellow colour, free from resin or dirt shall be dissolved in methylated spirit at the rate of 140 gm. of shellac to 1 litre of spirit. Suitable pigment shall be added to get the required shade.

**1.20.2 Preparation of surface :** The surface shall be cleaned. All unevenness shall be rubbed down smooth with sand paper and well dusted off. Knots if visible shall be covered with a preparation of red lead and glue size laid on while hot. Holes and indentations on the surface shall be stopped with glaziers putty. The surface shall then be given a coat of wood filler made by mixing whiting (ground chalk) in methylated spirit at the rate of 1 .5 kg. of whiting per litre of spirit. The surface shall again be rubbed down perfectly smooth with glass paper and wiped clean.

**1.20.3 Application :** The number of coats of polish to be applied shall be as described in the item.

A pad of woolen cloth covered by fine cloth shall be used to apply the polish. The pad shall be moistened with the polish and rubbed hard on the wood, in a series of overlapping circles applying the mixture sparingly but uniformly over the entire area to give an even level surface. A trace of linseed oil on the face of the pad facilitates this operation. The surface shall be allowed to dry and the remaining coats applied in the same way. To finish off, the pad shall be covered with a fresh piece of clean fine cotton cloth, slightly damped with methylated spirit and rubbed lightly and quickly with circular motions. The finished surface shall have a uniform texture and high gloss.

**1.20.4 Measurement, Rate and other Details :** These shall be as for Painting (General) mentioned here-in before as far as they are applicable.

**NOTE: Consumption of paint for some painting items is given in Appendix – “C-1”.**

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#### **1.21 RESIN BASED THERMO PLASTIC PAINT (DECORATIVE AND PROTECTIVE FINISH) :**

**1.21 .1 Materials :** Resin based thermo plastic paint such as Sandtex Matt or other equivalent approved manufacture, colour and shade shall only be used.

**1.21.2 Preparation of Surface & General:** The Specifications for Painting (General) described here-in-before shall hold good as far as they are applicable.

**1.21.3 Protective Coatings:** On surfaces such as ferrous metals, brass, copper and phosphor bronze, a protective coating of suitable bituminous compound or chromate red oxide should be given. New wood should be treated with a leafing grade aluminum primer or a water based acrylic emulsion primer.

The surfaces with algae growth shall be thoroughly cleaned down to remove as much growth as possible and effective solution of stabilized house hold bleach (calcium hypochloride) of approved quality with approximate 35% chlorine content @ 2 kgs. per 50 ltrs. (or as per manufacturers recommendations) should be used to treat the surfaces.

On chalky or friable surfaces after removing the loose materials by stiff brushing or scraping the surface should be treated with one coat of advanced solvent based material such as snow sol stabilizing solution or other approved equivalent with white spirit.

**1.21.4 Application:** The ready mix Sandtex Matt or other equivalent approved resin based thermo plastic paint shall be applied on clean and wetted surfaces by means of brushes or roller. The solution shall be kept well stirred during the period of application. To avoid direct heat of the sun, the paint shall be applied on the side in shade.

On rough and textured surfaces, one under coat of cement based paint such as Snowcem or other equivalent shall be applied before application of undiluted Sandtex Matt finish coat. In case of application of two coats of Sandtex Matt at normal temperatures, the first one shall be diluted by addition of 25% water and the second coat direct. In extremely hot environs, the second coat shall be diluted @ 2.5 ltrs. of water to 20 ltrs. of paint or as directed.

Painting with resin based thermo plastic paint shall be carried out generally as per manufacturers Specifications.

**1.21.5 Other Details:** The specification for Painting (general) mentioned here-in-before shall hold good as far as they are applicable.

Snowsol stabilized solution shall not be applied over bitumen. Snowsol stabilized solution treated surfaces shall not be left unpainted for more than 2 (two) days. Gypsum based materials shall not be used for filling of exterior cracks while preparation of surfaces.

**1.21.6 Mode of Measurement:** The painting unless otherwise mentioned shall be measured by area in sqm. up to two places of decimal. Length and breadth shall be measured correct upto two places of decimal of a meter. Deduction will be made from the areas of fixtures, grills, ventilation, outlets individually more than 0.05 sqm.

The item shall include removing nails, making good holes, cracks, patches etc. not exceeding 0.1 sqm. Each with materials similar in composition to the surface to be prepared.

**1.21.7 Rate:** The rate shall include the cost of all materials and labour involved in all the operations described above.

\* \* \*

## **2. VINERATEX OR VITROBRITE DECORATIVE TEXTURE COAT :**

### **2.1 GENERAL :**

Vineratex or vitrobrite decorative treatment/coating consisting of coating the plaster finished surfaces with decorative textured coat of ready mixed mixture of approved aggregate with bonding compound/synthetic adhesive manufactured by M/s. Vinera Industries & Co. or other approved manufacturer. The vineratex or vitrobrite treatment coating shall be got done through approved agency as per manufacturers recommendations.

The vineratex or vitrobrite treatment shall be applied/coated directly over the sub-base of reasonably smooth/levelled and clean surface like plastered brick work (plaster not being raked or scratched) in-situ concrete, precast concrete units, light weight blocks, asbestos cement sheet etc. as specified.

### **2.2 MATERIAL:**

The various aggregate and special bonding media/synthetic resin shall be strictly as per manufacturers recommendations. Only such aggregates shall be used, which are weather and corrosion resistant viz. glass, ceramic marble, chips, granite, quartz and flint, hametites, pyrites or one in natural vitrified, colonized or other processed forms as specified. The aggregate shall vary in sizes from 0.5 mm. to 2.5 mm. and shall be applied in shades as specified. The finish shall have a film thickness of 3 mm. average.

### **2.3 SURFACE PREPARATION:**

Before commencing, the surfaces should be cleaned thoroughly to remove any grease, dirt, dust or loose particle and should be free from surface water. Extremely porous surfaces should be pre-sealed with a thin coat of suitable primer. Previous painted surfaces if any, should be prepared by thoroughly scrapping off all loose flaking paint film, washing down with a suitable detergent and rinsing thoroughly with clean water and allowed to dry.

### **2.4 APPLICATION:**

Vineratex or vitrobrite shall be brought to site in sealed containers. Addition of thinner at site will not be permitted. The material in the containers shall be mixed thoroughly before use, to off-set the settlement occurred due to heavy vibration while transporting and during storage.

A small amount of Vineratex or vitrobrite mixture shall be placed on a spot board. The spot board shall be held against the surface on which the treatment/coating is to be applied. The mixture shall be applied to the surface evenly with the help of laying on trowel to uniform thickness of about 3 mm. on an area of about 0.18 sqm. Scrap off the excess material with the help of the steel float to obtain an even film thickness of 3 mm. This shall be achieved by using the steel float held slightly on the trailing edge, putting an even pressure and scrapping off the excess material/mixture, left on the spot board shall be immediately put back into drum and shall be mixed well before reuse.

Level of the vineratex or vitrobrite film to a smooth and even finish using the flat edge of steel float. It is important that only small areas of about 0.18 sqm. shall be treated at a time. Wherever possible, whole work should be completed without stop in one operation by engaging sufficient number of workers, so that flowing edge may be maintained without forming any joint. If this is unavoidable, a suitable natural break in the application should be chosen and the joint shall be made using a straight edge, which can be continued when application is resumed the following

day. Overlap or over toweling at joints shall be avoided. This treatment shall always be carried out in shade, away from full effect of hot sun.

At all times the completed work of vineratex or vitrobrite shall be protected against rain fall until complete hardness has been obtained which takes about 24 hours.

Once the treatment/coating is completed and set hard, no other treatment like polishing, cleaning, washing with acid etc. shall be resorted to in this area. The treatment/coating shall be taken up in hand when all other construction works viz. plastering, electrical wiring, plumbing, painting etc. have been completed.

After the whole work is completed, the vineratex/vitrobrite shall be given a coat of anti-fungus gel to avoid fungus growth on surfaces. The contractor shall be responsible to protect the finished surface from any damages for whatever reason whatsoever.

## **2.5 MODE OF MEASUREMENT:**

Mode of measurement shall be similar to sand face/roughcast plaster items.



**APPENDIX – “C-1”**  
**CONSUMPTION OF PAINT FOR SOME PAINTING ITEMS:**

<b>Coverage Achieved Per Litre or Per Kg. of Paint / Material</b>				
<b>Sr. No.</b>	<b>Name of Paint</b>	<b>Area coverage For one coat (Old work)</b>	<b>Area coverage For two coats (New work)</b>	<b>Area coverage Per Addl. coat</b>
1	Synthetic enamel paint	14 m <sup>2</sup> per Ltr.	8.5 m <sup>2</sup> per Ltr.	18 m <sup>2</sup> per Ltr.
2	Plastic emulsion paint	14 m <sup>2</sup> per Ltr.	8.5 m <sup>2</sup> per Ltr.	18 m <sup>2</sup> per Ltr.
3	Oil Bound distemper	10 m <sup>2</sup> per Ltr.	6.0 m <sup>2</sup> per Ltr.	12 m <sup>2</sup> per Ltr.
4	Dry distemper	10 m <sup>2</sup> per kg.	6.5 m <sup>2</sup> per kg	12 m <sup>2</sup> per kg
5	White wash	5 m <sup>2</sup> /kg of lime	3.5 m <sup>2</sup> /kg of lime	10 m <sup>2</sup> /kg of lime
	<b>Note: Following things to be added in lime</b> i) Adhesive (DDL/SDL)-5% of lime ii) Neel (Blue)-3 gm per kg of lime iii) Water – 5 kg of water per kg of lime			
6	Cement based paint	4.5 m <sup>2</sup> per kg.	2 m <sup>2</sup> per kg.	6 m <sup>2</sup> per kg.
7	Aluminum paint	20 m <sup>2</sup> per Ltr.	12.5 m <sup>2</sup> / Ltr.	28 m <sup>2</sup> per Ltr.
8	Bitumen Paint/Black Japan	14 m <sup>2</sup> per Ltr.	14 m <sup>2</sup> per Ltr.	28 m <sup>2</sup> per Ltr.
9	Neeru (or lime punning with slacked lime ) over plaster	0.5 m <sup>2</sup> per kg. of slacked lime		
10	Red oxide metal primer	16 m <sup>2</sup> per Ltr.		
11	Cement primer	12 m <sup>2</sup> per Ltr.		
12	Wood primer	13 m <sup>2</sup> per Ltr.		
13	Wax polishing of new wood work with ready made polish	20 m <sup>2</sup> per kg.	20 m <sup>2</sup> per kg.	20 m <sup>2</sup> per kg.
14	French or spirit polish	10.5 m <sup>2</sup> per Ltr.		
15	Varnish	14 m <sup>2</sup> per Ltr.	8.5 m <sup>2</sup> per Ltr.	18 m <sup>2</sup> per Ltr.
16	<b>Requirement of paint per coat in Structural steel work on tonnage basis.</b> i) Truss and Lattice girder work – 4.5 liters per tonne. ii) Plane Beam/plane girder work – 2.5 liters per tonne.			

**APPENDIX – “C-2”**  
**CO-EFFICIENT FOR EQUIVALENT PLAIN AREAS FOR PAINTING ITEMS:**

<b>SN</b>	<b>DESCRIPTION OF WORK</b>	<b>MULTIPLYING CO EFFICIENTS</b>
<b>I.</b>	<b>WOOD WORK: DOORS, WINDOWS ETC.</b>	
1	Panelled or framed and braced doors, windows etc.	1.30 (for each side)
2	Ledged & battened or ledged, battened & braced doors, windows etc.	
3	Flush doors etc.	
4	Part paneled and part glazed or gauzed doors, windows etc.	1.00 (for each side)
5	Fully glazed or gauzed doors, windows etc.	0.80 (for each side)
6	Fully mentioned or louvered doors, window etc.	1.80 (for each side)
7	Trellis (or Jaffri) work one way or two way	2.00 (for painting all over)
8	Carved or enriched work:	2.00 (for each side)
9	Weather boarding:	1.20 (for each side)
10	Wood shingle roofing:	1.10 (for each side)
11	Boarding with cover fillets and match boarding.	1.05 (for each side)
12	Tile and slate battening	0.80 (for painting all over)
<b>II.</b>	<b>STEEL WORK : DOORS, WINDOWS ETC.</b>	
13	Plain sheeted steel doors or windows:	1.10 (for each side)
14	Fully glazed or gauzed steel doors and windows etc.	0.50 (for each side)
15	Partly panelled and partly glazed or gauzed doors and windows etc.	0.80 (for each side)
16	Corrugated sheeted steel doors or windows,	1.25 (for each side)
17	Collapsible gates	1.50 (for painting all over)
18	Rolling shutters of inter locked laths.	1.10 (for each side)
<b>III.</b>	<b>GENERAL WORKS:</b>	
19	Expanded metal, hard drawn steel wire fabric of approved quality, grill work and gratings in guard bars, balusters, railings, partitions and m.s. bars in window frames.	1.00 (for painting all over)
20	Open palisade fencing and gates including standards, braces, rails, stays etc. in timber or steel.	1.00 (for painting all over)
<b>NOTE:</b> the height shall be taken from the bottom of the lowest rail, if the palisades do not go below if (or from the lower end of palisades, if they project below the lowest rail) upto the top of palisades but not upto the top of standards, if they are higher than the palisades.		
<b>SN</b>	<b>DESCRIPTION OF WORK</b>	<b>MULTIPLYING CO EFFICIENTS</b>
21	Corrugated iron sheeting in roofs, side cladding etc.	1.14 (for each side)
22	A.C. Corrugated iron sheeting in roofs, side cladding etc.	1.20 (for each side)
23	A.C. Semi-corrugated iron sheeting in roofs, side cladding etc. or Nainital pattern using plain sheets.	1.10 (for each side)
24	Wire gauze shutters including painting of wire gauze.	1.00 (for each side)

**APPENDIX**

- |  |   |
|--|---|
| 1. Defect liability period                         | - 12 months from actual date of completion  |
| 2. Date of commencement                            | - From the date of dispatch of work order + (plus)<br>Four days postal transit time / From the date of<br>Issue of written order. |
| 3. Period of Completion                            | -Six months.  |
| 4. Date of completion                              | - The day after the period of completion from<br>date of commencement of work.  |
| 5. Date of submission of the bill by<br>Contractor | - Last working day of every month with detailed<br>measurements.  |
| 6. Value of work for Interim<br>certificate        | - 25% of the work order amount  |
| 7. Period of Final Measurement and<br>Valuation    | - Three months from date of completion  |
| 8. Agreed Liquidated Damages                       | - Rs. 500/- per day for delay in the work   |

**LIST OF APPROVED MATERIALS & SPECIALIZED AGENCIES****Note:**

1. The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material or engaging any of the specialized agencies. The Contractor shall make a detailed submittal with catalogues and highlighted proposed specifications, as well as full details of the works executed by the specialized agency, as specified.
2. Wherever applicable, the engineer-in-charge may approve any material equivalent to that specified in the tender subject to proof being offered by the Contractor for equivalence to his satisfaction.
3. Unless otherwise specified, the brand / make of the material as specified in the item nomenclature, in the particular specifications and in the list of approved materials attached in the tender, shall be used in the work.
4. In case of non availability of the brand specified in the contract the Contractor shall be allowed to use alternate equivalent brand of the material subject to submission of documentary evidence of non-availability of the specified brand. The necessary cost adjustments on account of above change shall be made for the material.
5. Only C class TATA make pipes shall be used in G.I. Piping work in case of non availability the Contractor shall be allowed to use alternate equivalent brand of the material subject to submission of documentary evidence of non – availability, the necessary cost adjustments on account of above change shall be made for the material.

**A. MATERIALS:**

1.	CEMENT	Ultratech A.C.C. GUJARAT AMBUJA BIRLA VASVADATTA GRASIM CCI
2.	WHITE CEMENT	J.K. BIRLA
3.	CHLORPYRIPHOS	DE NOCIL AIMCO
4.	READY MIX CONCRETE	A.C.C. Ultratech UNITECH RMC TARMAC GODREJ ALCON
5.	SUPERPLASTICIZERS	MC BAUCHEMIE SIKA FOSROC MBT ASIAN LABORATORIES.
6.	WATERPROOFING COMPOUND (LIQUID)	PIDIPROOF LW STRUOCO EXCEL CICO FOSROC
7.	GALVANISING	JENCO STEELLITE KARAMTARA ENGINEERING PRIVATE LIMITED
8	REINFORCEMENT STEEL	TISCO SAIL RINL IISCO
9	STRUCTURAL STEEL	TISCO SAIL RINL JINDAL

10	COLOURED / WHITE GLAZED CERAMIC TILES	H & R JOHNSON. KAJARIA BELL
11	CERAMIC TILES	KAJARIA H & R JOHNSON. BELL CERAMIC NITCO
12	VITRIFIED CERAMIC TILES	MARBONITE OF H. & R. JOHNSON DIAMOND OF NAVEEN ASIAN NITCO
13	POLYMER MODIFIED CEMENTITIOUS GROUT	BAL ENDURA FOSROC
14	GLASS MOSAIC TILES	BISSAZZA
15	HARDENERS	IRONITE FERROK HARDONATE
16	CONCRETE BLOCKS	CONWOOD GURJARI HINDUSTAN LOK GROUP M/S SAI BLOCKS M/S VED PMC LTD.
17	GLASS BRICKS / BLOCKS	PITTSBURG CORNING FIDENZA VETROARREDO
18	FLUSH DOORS	KUTTY FLUSH DOORS AND FURNITURE CO. PVT. LTD. ANCHOR KANARA WOOD AND PLYWOOD INDUSTRIES LTD
19	FRD SHUTTERS	KUTTY KANARA WOOD AND PLYWOOD INDUSTRIES LTD. SUKRI ANCHOR
		ANCHID ANCHOR DURIAN

20	NATURAL WOOD VEENERS	KANARA WOOD AND PLYWOOD INDUSTRIES LTD. IMPORTED GARNET
21	PLYWOOD (Conforming to IS:710)	ARCHID KITPLY GREEN PLY CENTURY KANARA WOOD AND PLYWOOD INDUSTRIES LTD. GARNET
22	MELAMINE POLISH	ASIAN PAINTS MELAMYNE GOLD WUDFIN OF PIDILITE INDUSTRIES TIMBERTONE OF ICI DULUX
23	ANTI STATIC HIGH PRESSURE LAMINATE	FORMICA BAKELITE HYLAM
24	HIGH PRESSURE LAMINATES	MERINO GREENLAM DECOLAM CENTURY FORMICA ANCHOR
25	ROLLING SHUTTERS & GRILLS	STANDARD SWASTIK SHUBDHWAR
26	BALL BEARING HINGES	JJ (MPORTED) FROM SHALIMAR OR EQUIVALENT APPROVED BRAND MAGNUM DORMA HAFELE NEKI
27	STAINLESS STEEL SCREWS (unless otherwise specified)	KUNDAN ARROW
28	ALUMINIUM EXTRUSIONS	HINDALCO INDALCO JINDAL
29	HARDWARE & BRASSWARE	SHALIMAR INDO-BASS AMARBHOY DOSSAJI EARL BIHARI MAGNUM

30	ANNEALED FLOAT GLASS	ST. GOBAIN MODIGUARD HINDUSTAN PILKINGTON
31	FIRE-RATED GLASS (HALF HOUR FIRE RATING) TRANSPARENT CLEAR WIRED GLASS	PYROSHIELD OF PILKINGTON OR EQUIVALENT SCHOTT FERILITE
32	SYNTHETIC ENAMEL PAINTS	ICI ASIAN PAINTS BERGER PAINTS
33	EPOXY PRIMER AND PAINTS	BERGER PAINTS ASIAN PAINTS
34	GYPSUM BOARD	INDIA GYPSUM BORAL
35	G I PIPE	TATA ZENITH JINDAL
36	COPPER PIES	IBPL RAJCO ABC
37	CALCIUM SILICATE BOARD FOR FRD SHUTTERS	PROMATECT-H OF PROMAT PROMINA SUPALUX MASTER BOARD STARPAN HILUX
38	INTUMESCENT STRIP FOR FRD SHUTTERS	PROMAT PEMKO INTUMEX ASTOFLAME
39	FALSE CEILING SYSTEM ALONG WITH SUPPORTING GRID AND MINERAL FIBRE TILES	ARMSTRONG USG
40	CALSIUM SILICATE BOARD FOR FALSE CEILING	HILUX STARPANE
41	FALSE CEILING SYSTEM ALONG WITH SUPPORTING GRID FOR CALCIUM SILICATE BOARD	HUNTER DOUGLAS INTERARCH LAXMI
	FALSE CEILING SYSTEM ALONG	HUNTER DOUGLAS



42	WITH SUPPORTING GRID AND ALUMINIUM PANELS	INTERARCH
43	FALSE CEILING SYSTEM ALONG WITH SUPPORTING GRID AND GYPSUM BOARD	INDIA GYPSUM BORAL
44	CEMENT CONCRETE PAVER TILES AND BLOCKS	SUPER TILES AND MARBLES PVT. LTD. NITCO TILES LIMITED CEMENTILE INDUSTRIES
45	STEEL FRD SHUTTER	SUKRI SHAKTI GODREJ GLOBAL
46	STUD ANCHORS (HEAVY)	HILTI FISSURE
47	STUD ANCHORS	ARROW SHAKTI
48	CI COVERS	NECO
49	C. I. PIPES	ELECTROSPUN KESORAM
50	SPUN PIPES	NECO
51	SANITARY APPLIANCES	PARRYWARE HINDWARE
52	SANITARY FITTINGS	JAQUAR AQUAPLUS ESS ESS
53	STAINLESS STEEL DOOR HANDLES LOCK AND FITTINGS	DORMA HAFELE NEKI UNION
54	FLOOR SRINGS, DOOR CLOSERS, PANIC BARS	DORMA HAFELE SEVAX
55	CUPBOARDS LOCKS	EBCO GODREJE EARL BIHARI
		DORMA

56	FLOOR STOPPER	HAFELE NEKI MAGNUM
57	ROLLED HOLLOW SECTIONS, M.S. TUBES, M.S. PLATES	TISCO SAIL RINL JINDAL LOYAD
58	TEXTURE PAINTS	HERITAGE, ACROTEX NAVAIR, SPECTRUM
59	FALSE CEILING SYSTEM ALONG WITH SUPPORTING GRID AND ACOUSTICAL TILES	ARMSTRONG USG ECOPHON
60	EPOXY PAINTS ON CONCRETE	TUFF COAT ASIAN PAINTS BERGER PAINTS SHALIMAR
61	METALIC PAINT	ASIAN PAINTS BERGER PAINTS ICI
62	FIRE RATED PAINTS	ASIAN PAINTS BERGER PAITNS SHALIMAR
63	EXTERIOR PAINT (EXTERNAL WALL)	ASIAN PAINTS BERGER PAITNS ICI/JOTUN
64	INTERNAL PAINT	ASIAN PAINTS BERGER PAITNS NEROLAC PAINT

**B. SPCIA\*\*LISED AGENCIES:**

1.	ROCK ANCHORS	FRESSINET BBR VSL DBM GEOTECHNICS & CONST. PVT. LTD. M/S PARESH CONSTRUCTION & FOUNDATION PVT. LTD M/S DYNAMIC PRESTRESS
2.	ANTI-TERMITE TREATMENT	PCI OR EQUIVALENT
3.	WATERPROOFING WORK	LIKPROOF INDIA PVT. LTD. MODERN WATERPOOFING CO. OVERSEAS WATERPROOFING CORPORATION INDIA WATERPROOFING CO. NINA INDUSTRIES
4.	STRUCTURAL GLAZING	ALUMAYER INDIA PVT. LTD ALUPLEX INDIA PVT. LTD. ALKARMA PVT. LTD PERMESTILISA INDIA PVT. LTD. SP FABRICATORS PVT. LTD. GLASS WALL SYSTEM AHLCON INDIA PVT. LTD.
5.	ACCESS FLOOR SYSTEM	KINGSPAN (HEWETSON) DONN OF USG TYCO INDUSTRIES
6	FALSE CEILING SYSTEM	ARMSTRONG HUNTER DOUGLAS INDIA GYPSUM
7	PLUMBING SANITARY WORKS	NAGARWALLA ENGINEERING COMPANY PVT LIMITED SHREE KHODIYAR SANITATION D. S. GUPTA

\* Wherever grouting is specified for waterproofing treatment, the grouting shall be done using non-shrink polymeric waterproofing grouting compound.

- \* The contractor shall arrange and provide at the site of work all the equipments for field testing as required like balances, sieves, slump cone, dial gauges, compression testing machines (still the samples shall be tested in an independent laboratory as approved by the Engineer-in Charge), graduated measuring cylinders, steel tapes, vernier calipers, micrometer screw gauges, plumb bobs, spirit levels, Schmidt rebound hammer, total station survey equipment, magnifying glass, screw drivers, plastic bags for samples, etc.
- \* Allowing establishing the site laboratory by the contractor shall not absolve the contractor from fulfilling the criteria of getting the tests done in an independent laboratory. The decision of the Engineer-in Charge of allowing any test in the site laboratory or any other laboratory shall be final and binding on the contractor and no claim of any kind whatsoever shall be entertained from the contractor on this account.
- \* Even if the certain items of work are carried out by the specialized contractors, the responsibility for the work shall however rest with the contractor only.
- \* Unless otherwise specified for the item, the maximum water cement ratio for any grade of concrete shall not be more than 0.5. The contractor shall within 15 days of issue of letter for commencement of the work, submit the mix design for various grades of concrete along with 7 days crushing strength reports and within 40 days submit 28 days crushing strength reports, for the samples for the mix, Nothing extra shall be payable on account of admixing any chemical Admixture for achieving any characteristic for the concrete. Concreting shall be commenced only after the approval of the mix design by the Engineer-in-Charge.
- \* Wherever required the M.S. inserts shall be provided during the casting of RCC / PCC. The payment of providing and fixing inserts shall be made under item no.6.3. However contractor shall have to bear all the incidental costs and expenses on this account.
- \* As far as possible the contractor shall plan that the concreting is carried out during day shift.
- \* Stainless pins & cramps and expansion hold fasteners for fixing dry granite stone cladding shall be of stainless steel grade 304 of Arrow or Shakti make.
- \* The water repellent coating on the RCC and the granite stone slab shall be applied using low-pressure spray equipments (3-10kg/sqm) or brush applied. Care shall however be taken that the rebound losses are minimum and the material is not wasted on this account.
- \* The contractor shall produce cash voucher and the certificate from the plywood / door shutter manufacturer (including the fire resistant door shutters) for the kiln seasoning, chemical impregnation, glue usage (as specified), fire retardant chemical impregnation etc. otherwise the material shall not be accepted.
- \* Timber tone melamine coating of ICI dulux.

Name of work:-Internal painting to Type -II (17-32), Type - II (33-44), Watchmen quarters at Nitie Campus.

Sr. No	Description of Items	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
1	<b>Scrapping the old plastered internal surface</b> with sand paper and coating the entire surface with mixture of whiting or glue and linseed oil including scaffolding etc. complete as directed.	7940.00	M <sup>2</sup>	22.00	174680.00
2	Providing and applying <b>one priming coat on concrete/ masonry/Asbestos cement/plastered surfaces</b> including preparing of the surface by thoroughly cleaning oil, grease, dirt, and other foreign matter with wire brushing, fine fire steel wool, and sand paper, scaffolding etc. complete. (As directed by Engineer in Charge)	7940.00	M <sup>2</sup>	26.00	206440.00
3	Providing and applying morning glory Asian paints or equivalent <b>plastic emulsion paint</b> of approved quality colour and shade to old/new surfaces in <b>two coats</b> including scaffolding, preparing the surfaces to receive the paint and applying putty (excluding priming coat) complete.	7940.00	M <sup>2</sup>	84.50	670930.00
4	Providing and applying <b>two coats of synthetic enamel paints of approved colour to new/old structural steel work and wood work</b> in buildings and workshops including scaffolding if necessary, cleaning and preparing surfaces by solvent, degreasing and derusting by manual scraping by chemical methods complete. (excluding primer coat)	975.00	M <sup>2</sup>	67.00	65325.00
5	<b>Removing the existing cement plaster</b> of any thickness without causing dust nuisance and stacking the debris upto a distance of 50 metres or spreading in the compound and cleaning the site etc. complete.	400.00	M <sup>2</sup>	26.00	10400.00
6	Providing internal <b>cement plaster 12mm thick in single coat in cement mortar 1:4</b> without neeru finish to concrete or brick surfaces in all positions including scaffolding, and curing complete.	400.00	M <sup>2</sup>	221.00	88400.00
7	Providing <b>neeru finish to plastered surface</b> in all positions including scaffolding and curing complete.	400.00	M <sup>2</sup>	55.00	22000.00
8	<b>Chipping the R.C.C. surface</b> and cleaning the rusted reinforcement and exposed surface by wire brush mechanical device or any other established method and applying rust removing solution of approved make and quality with cotton waste swab to reinforcement and allowing to dry the same for 24 hours, brushing of loose particle and applying 1st coat of rust preventive coating of polymer and cement slurry in 1:1:5 proportion with soft brush without adding water including applying another coat of rust preventing after 4 hours allowing Air Curing for 48 hours etc. including scaffolding etc. complete.	100.00	M <sup>2</sup>	102.80	10280.00

9	Providing and applying priming <b>cum bonding coat</b> of polymer of approved make and quality as approved by Engineer-in-charge and cement slurry in 1:1 proportionate by weight to concrete area by brush or any other established method etc. complete.	200.00	M <sup>2</sup>	97.30	19460.00
10	Providing and applying <b>15 mm thick polymer mortar</b> to load carrying R.C.C. member in two layers in proportion of 1:5:15 by weight Polymer of approved quality and make, cement and <b>wash quartz sand</b> with required water cement ratio for desired consistency and applying and finishing by floating curing after curing initial setting time etc. as per manufactures specification etc. complete.	75.00	M <sup>2</sup>	865.00	64875.00
11	Providing and applying <b>30mm thick polymer mortar</b> to load carrying R.C.C. member in two layers in proportion of 1:5:15 by weight Polymer of approved quality and make, cement and <b>wash quartz sand</b> with required water cement ratio for desired consistency and applying and finishing by floating curing after curing initial setting time etc. as per manufactures specification etc. complete.	25.00	M <sup>2</sup>	1283.53	32088.25
		<b>Total Amount</b>			<b>1364878.25</b>
		<b>Say Rs.</b>			<b>1364878.00</b>

(Inclusive of all taxes.)

I/we hereby ready to execute the work-----% (in words-----  
 ) ABOVE /BELOW / AT PAR on the estimate cost put to tender inclusive of all taxes. Total Tender Amount quoted after considering the percentage in figure Rs.\_\_\_\_\_ Total Tender Amount quoted after considering the percentage in words Rs\_\_\_\_\_

Dt.\_\_\_\_\_

**CONTRACTOR**  
**Seal & Address**

**EXECUTIVE ENGINEER (I/c)**