



**INTERIOR AND FURNITURE WORK OF JANKIDEVI BAJAJ INSTITUTE OF
MANAGEMENT STUDIES BUILDING**

**Volume – I
(Conditions of Contact)**

Architects Consultant:
M/S. Agora designers Pvt Ltd.
1249/50 Deccan Gymkhana,
Gokhale Chowk, Pune –411 004
Tel: 020-25539631
E-mail:agora.designers@gmail.com

OWNER:
The Registrar,
SNDT Women's University,
1, NathibaiThackersey Road,
Churchgate, Mumbai 400 020.
Tel:[+91-22-22031879](tel:+91-22-22031879),
[+91-22-22037524](tel:+91-22-22037524),
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Name of Work: Interior and Furniture work of Jankidevi Bajaj Institute of Management studies, Erandwane, Pune Campus.

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The Registrar
SNDT Women's University

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TENDER NOTICE

Ref No.: Est. Univ. / (N/P)-1/2018-19/01

Dear Sir,

On behalf of, The Registrar **SNTD WOMEN'S UNIVERSITY** invites fresh Percentage Rate E-tenders for Proposed Interior Work of Jankidevi Bajaj Institute of Management Studies Building, Pune Campus.

Tender forms can be obtained from official web site of <http://sntd.ac.in/tender> and <https://maharashtra.etenders.in/> from 1st August 2018 at 10.30 a.m. onwards.

Pre-bid meeting will be held on 16th August 2018 at 11.30 a.m. at Campus Office, SNTD Women's University, Erandwane, Pune.

The sealed tenders will be submitted on or before 30th August 2018 upto 11.00 a.m. at Administration Building SNTD Women's University, Nathibai Thakersey Road, Churchgate, Mumbai - 400 020 and opening tender will be held in Churchgate campus on 31st August 2018, 11.00 a.m. onwards. Contractors should remain present at the time of opening. **Any change in the opening time and date same will be communicated to all contractors on E-Tender Portal. The employer reserves the right to reject any or all tenders without assigning any reasons thereof.**

E-Tender Schedule is as below:

Seq No	ALLGOM Stage	Vendor Stage	Start Date & Time	Expiry Date & Time
1	Release of tender	-	01.08.2018 10.00	01.08.2018 10.30
2	-	Tender Download	01.08.2018 10.31	27.08.2018 17.00
3	-	Bid Preparation	01.07.2018 17.01	27.08.2018 17.00
4	Superhash Generation & Bid Lock	-	27.08.2018 17.01	28.08.2018 12.00
5	-	Control Transfer of Bid	28.08.2018 12.01	30.08.2018 17.00
6	Envelope 1 Opening	-	31.08.2018 11.00	31.08.2018 15.30
7	Envelope 2 Opening	-	31.08.2018 15.30	31.08.2018 17.00

Sd/
The Registrar
SNTD Women's University
1, NathibaiThackersey Road,
Churchgate Campus.
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1. DETAILED TENDER NOTICE

1.1 Sealed **Percentage Rate** tenders are invited from qualified Contractors for the work as per the following details:

1.1.1	Name and Location of Work	Interior and Furniture Work of Jankidevi Bajaj Institute of Management Studies Building for Shreemati Nathibai Damodar Thackersey women's university, Pune Campus.
1.1.2	Estimated Cost of Tender	Rs.1,28,88,546.20/- (Rs. One Crore Twenty Eight Lakh Eighty Eight Thousand Five Hundred Fourty Six and Twenty Paise.)
1.1.3	Cost of Tender	RS. 1180 /-(Rs. One Thousand including GST Only) (Non refundable) in favour of The Registrar, SNDT Women's University payable at Mumbai drawn on Nationalized Bank only
1.1.4	Scope of Work	All Interior and Furniture works
1.1.5	Date of Commencement	Date of Work Order
1.1.6	Time of Completion	07 months (Seven Months including Monsoon) from the date of Work Order
1.1.7	Date and Place of Submission of Tender	On E Tender Portal as per give time Schedule and Hard copy on or before 30 th August 2018 upto 11.00 a.m. at Administration Building SNDT Women's University, Nathibai Thakersey Road, Churchgate, Mumbai - 400 020
1.1.8	Time of Opening	31 st August 2018 at 11.00 a.m onwards SNDT Women's University, Nathibai Thakersey Road, Churchgate, Mumbai - 400 020.
1.1.9	Earnest Money	Rs. 1, 28, 885/- (Rs. One Lakh Twenty Eight Thousand Eight Hundred Eighty Five only) to be paid through Online Payment Modes i.e. Net Banking, Debit Card, Credit Card and NEFT/RTGS during Bid Preparation Stage.
1.1.10	Total Security Deposit	a) Total 2% of value of work (inclusive of all Taxes) b) 2% of which 50% to be paid at the time of agreement and 50% to be deducted from RA Bills.
1.1.11	Refund of security deposit	a) 50% of security deposit to be refunded after issue of certificate. Virtual completion. b) Balance 50% of security deposited to be refunded. After expiry of defects liability period of 12 months and its proper discharge.
1.1.12	Additional Performance Security (Refer general condition no. 33, Page .46)	Addition performance security in the form of DD/FDR/BG of any nationalize/Scheduled bank only should be enclosed in Envelop no. 2 (as applicable).
1.1.13	Retention Money	The proportion of payments retained shall be 6% from each R.A. bill subject to a maximum of 5% of final contract price.
1.1.14	Defects Liability Period	12 months from date of Virtual Completion.
1.1.15	Liquidated Damage	(1/2000) th of the initial contract price rounded off to the nearest thousand per day.

Note: Contractor should quote the rate by considering Goods and Service Tax (GST)

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1.2 In the event of the tender being submitted by a firm, it must be signed by each proprietor/partner thereof, and in the event of the absence of any partner, it shall be signed on his behalf by a person holding a Power of Attorney authorizing him to do so.

1.3 Earnest Money

1.3.1 Earnest money deposit shall be treated as a token of the tenderer earnestness to carry out the work Rs. 1, 28, 885/- (Rs. One Lakh Twenty Eight Thousand Eight Hundred Eighty Five only) to be paid through Online Payment Modes i.e. Net Banking, Debit Card, Credit Card and NEFT/RTGS during Bid Preparation Stage.

1.3.2 In the event of his tender being accepted, subject to the provisions of sub clause (1.5) below, the said amount of Earnest Money shall be appropriated towards the amount of Security Deposit payable by him under the General Conditions of Contract or refunded if the total security deposit is furnished.

1.3.3 After submitting the tender the Contractor withdraws his offer or modifies the same, or after acceptance of his tender the Contractor fails or neglects to furnish the balance of Security Deposit, then, without prejudice to another rights and powers of the Owner hereunder, or in Law, the Owner shall be entitled to forfeit the full amount of Earnest Money deposited by him.

1.3.4 In the event of his tender not being accepted, the amount of Earnest Money deposited by the Contractor shall, unless it is forfeited under the provisions of sub-clause (1.3.2) above, be refunded to him on his passing receipt thereof.

1.4 Receipts for payments made on account of any work when executed by a firm, should also be signed by all the 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 receipts for the firm.

1.5 Tender which proposes, any alteration in the works specified in the said form of invitation of tender or in the time allowed for carrying out the work or which contains any other conditions of any sort is liable to rejection.

1.6 The tenders shall be opened in the presence of Contractors who have submitted tenders or their representatives who may be present at that time. In the event of a tender being accepted, the Contractor shall be present for the purpose of identification, sign copies of the specifications and other documents and the agreement. In the event of the tender being rejected, the Owner shall refund the amount of Earnest Money deposit to the unsuccessful Contractors on their letter of demand for refund EMD.

1.7 The Owner reserves the right of rejecting all or any of the tenders without assigning any reason and is not bound to accept the lowest or any other tender.

1.8 No receipt for any payment alleged to have been made by a Contractor in regard to any matter relating to this tender shall be valid and binding on the Owner unless it is signed by the Architect/ Owners Authorized representative.

1.9 Tenders submitted without payment of Earnest Money Deposit will not be opened or accepted.

1.10 Drawings can be inspected in the office of the Architect **M/S. Agora designers Pvt. Ltd.** during working hours.

1.11 In case of any difference in the rates quoted in words and figures that given in words shall prevail.

1.12 The offer of the tenderer shall remain open for a period of **120 days from date of submission**. During the period no tenderer will be allowed to withdraw his tender.

1.13 The tender documents shall be submitted in a sealed inner cover and a sealed outer cover with the envelope, containing the Earnest Money placed in between. All the envelopes/covers shall be addressed to the '**The Registrar, SNTD Women's University**', Churchgate, Mumbai with the name of the Contractor given in the bottom left hand corner and super scribed Tender for Structural Repair o Auditorium Building. The top most cover will be opened first. The cover containing the tender documents will only be opened if it is found that the Earnest Money submitted by the tenderers is in the appropriate form.

1.14 This is a Item rate tender.

1.15a Tederer shall submit Rate Analysis of Civil Work items along with bid document at the time of submission.

1.15 Under circumstances Contractor is entitled to claim enhanced rates for items in this contract in during the execution.

1.16 All corrections and additions or pasted slips shall be initiated.

1.17 Tenderer should submit last 3 years audited financial statement duly signed by chartered Accountant.

1.18 No foreign exchange would be released by the Owner for purpose of construction materials, plants and machinery required for the execution of work contracted for.

1.19 The tenders are requested to submit to the Architects in writing (electronically or other way) before **14th August 2018** (asking for any clarification or any variations or modifications that they would like to be made in the tender documents. Thereafter a pre-tender meeting will be held in Pune campus; at this meeting all issues raised by the tenderer will be discussed. Thereafter an amendment will be issued stating clearly as to the final modifications of the conditions which are acceptable to the Owner. This amendment will form part of the contract

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and the tenderer will be required to quote accordingly. Any other conditions given by the tenderer except those accepted in pursuance of the pretender meeting, will make the tender liable for rejection.

1.20 Sign & Seal of Contractor

Every page of the tender document shall have the seal of the Contractor and initialed, and full signature where specifically indicated.

1.21 No loss/ compensation / damages shall be payable by the Employer / Owner to the Contractor / anyone if the work stopped by the order of any judicial / Higher Administrative authority.

1.22 STUDY OF TENDER DOCUMENTS:

1.22.1 Upon submission of the Tender, it will be presumed that the Contractor has thoroughly studied the Tender document with all the terms, conditions, specifications, mode of measurements and drawings and has completely understood the nature, extent and scope of the work and is completely aware of his liabilities and responsibilities in respect of the contracted work.

1.22.2 In the event of any contradictions or inadequate clarity in this Tender document, these should be brought to the notice of the University/ Architects BEFORE quoting, and got properly clarified. In any case, at all times, the interpretation and decision of University / Architects shall be final and binding on the Contractor.

1.22.3 For the purpose of this Tender and subsequent construction Contract, any reference to the "The Registrar, SNTD Women's University" shall be the duly authorized representative spokesman for the Board of Governors and the Building Committee of the project, with absolute final authority.

1.23 VISITS TO SITE OF WORK

The Contractor is expected to visit the site of work and personally see the site conditions regarding water, labour conditions, leads, lifts, soil conditions and strata and all other factors affecting the work before submitting the quotation. Leads, lifts and permissibility for disposal of excavated material shall also be studied and considered in the quotations. **No extras or escalation** shall be granted on account of any error of judgment or miscalculation or misunderstanding of scope of the work.

1.24 UN CONDITIONAL QUOTATION

Submitted Tenders shall NOT be subject to ANY conditions other than those stipulated in the Tender Document. Quoted rates and amounts shall be deemed to be completely unconditional and any conditional Tenders are liable to be rejected outright. Contractors are requested to abide by this instruction, in their own interest, for the purpose of enabling comparison between equals with complete parity. If any, observation, assumptions, suggestions are not required to be communicated; these may be separately addressed to the University without having any bearing or impact on the Item rate quotation in the sealed Tender, in the process of evaluation.

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1.25 ONE BID FOR BIDDER:

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

1.26 LANGUAGE OF THE BID:

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

1.27 CORRIGENDUM OF BIDDING DOCUMENT:

Before the deadline for submission of the bid the University may modified the bidding document by issuing corrigendum on portal. Bidder should read all the corrigendum before quoting the rates. University will not entertain any objection during tender opening or later stage of tendering process.

1.28 CURRENCY:

Currency used in contract and for billing is **Indian Rupees** only.

**2.1 TENDER IS TO BE SUBMITTED IN TWO SEPARATE SEALED ENVELOPES AS BELOW:
ENVELOPE NO. 1:**

The first envelope clearly marked as "ENVELOPE NO. 1" shall contain the following documents.

- I. Information regarding Income Tax Circle/Ward/District in which he is assessed for income tax valid and up to-date. Income Tax Clearance Certificate (in original) from the Income Tax Officer, or true copy thereof duly attested.
- II. GST and PAN number.
- III. List and details of other works tendered for in hand with the value of work unfinished on the last date of submission and the List of executed/completed projects. The names of Clients, awarded value of works etc.
- IV. Names of Owner/Partners/Director of the Firm/Company and their addresses.
- V. List of Machinery and Plants immediately available with the Tenderer for use on this work and list of machinery proposed to be utilized on this work but not immediately available and the manner in which it is proposed to be procured.
- VI. Forwarding letter along with list of documents, forms, statements, specifications, etc.
- VII. Document required for prequalification for bidding as mentioned in detail in chapter no. 4
- VIII. Conditional tenders are liable to be summarily rejected.

2.3 ENVELOPE NO. 2: TENDER

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The second envelope clearly marked as "ENVELOPE NO. 2" shall contain only the main tender, including the common set of conditions/stipulations, if any issued by the SNTD University and performance security as per clause 1.1.12 of Detail tender notice and in mentioned form thereof. Tenderer should quote his offer in Schedule 'B' (i.e. Volume-II) of the tender on **Item above or below Estimated Cost** to be submitted only in Envelope no. 2. He should not quote this offer anywhere directly or indirectly in Envelope no. 1. The Contractor shall quote for the work as per details given in the main tender and also based on the detailed set of conditions issued if any, and/or any additional stipulations made by The SNTD Women's University.

2.4 SUBMISSION OF TENDER

The two sealed Envelopes no. 1 and 2 shall be again put together in one common cover and sealed. This sealed cover shall be marked on the left-hand top corner as Tender for "**Interior and Furniture Work of Jankidevi Bajaj Institute of Management Studies Building for Shreemati Nathibai Damodar Thackersey Women's University, Pune Campus.**", the full name and address of the tenderer and the name of the authorized Supervisor delivering the sealed cover containing the tender shall be Proposed **Interior and Furniture Work of Jankidevi Bajaj Institute of Management Studies Building for Shreemati Nathibai Damodar Thackersey Women's University, Pune Campus.**

Tender shall be submitted to Owners Office as per Detailed Tender Notice 1.1.7

1.22.6 PERIOD OF DECISION

The Tenders shall remain open for acceptance for a period of 120 days from the date on which they are due for submission, or any other extended date for their receipt, and during this period NO Contractor shall be allowed to withdraw his tender.

1.22.7 IMPROPER AND INCOMPLETE TENDERS

i) Quotations shall be tendered on Percentage Rate Basis in the annexed Schedule of Item Quantities. Please read the PREAMBLES prior to the item descriptions and specifications carefully before quoting the rates. Specific Brands of materials have been prescribed in some items, while acceptable options of Brand specifications have been listed in Chapter 16 in the Tender.

i) The quotations in the Tender shall be written clearly and shall be free from erasures, over-writing or conversions of figures. Corrections, where unavoidable, shall be made by crossing out, initialing and rewriting.

iii) Tenders received without Tender fee and EMD online payment receipt attached to the Envelope will NOT be accepted. Tenders received with any terms and conditions in variation with those stipulated in the Tender document shall NOT be considered.

1.22.8 ATTESTATION OF TENDER DOCUMENTS:

Contractors must RETURN the Tender Documents complete with the specifications, schedule of quantities, and drawings, with the Item rates, and total amounts in figures and words, and every page duly signed. Seal and Signature of the Contractor should also be placed below the summary

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INTERIOR AND FURNITURE WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY,
PUNE CAMPUS

at the end of the Schedule of quantities. Any tender not bearing signature of the Contractor on all documents accompanying the Tender is liable to be rejected.

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ORIGINAL AGREEMENT NO .B-1/.....

NAME OF WORK : Interior and Furniture work of Jankidevi Bajaj Institute of
Management studies, Erandwane, Pune Campus.

- 1) Name of Contractor : _____
- 2) No. & Date of Work Order : _____
- 3) Amount put to Tender : **Rs.** _____
- 4) Percentage quoted : _____
- 5) Amount of Contract : _____
- 6) Date of commencement : _____
- 7) Time stipulated for completion of work from the date of written order to start work, which will include the monsoon period. :
- 8) Date of completion as per agreement : _____
- 9) Actual Date of Completion : _____
- 10) Reference to sanction of Extension of time : 1)
2)
3)

Certified that this original Agreement contains

Pages from to

Fly Leaves _____ Nos.

Drawings _____ Nos.

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ACKNOWLEDGEMENT BY TENDERER

To,

**The Registrar, (hereinafter referred to as the Owner).
SNTD Women's University,
1, Nathibai Thackersey Road,
New Marine Lines, Churchgate,
Mumbai 400 020**

Dear Sir / Madam,

I / We have visited the site, got all the information of site conditions and information regarding execution of contract, facilities available at site / offered by the University, read and examined all documents relating to the proposed work

- a. Notice inviting tender
- b. Prequalification form
- c. Articles of Agreement
- d. General Conditions of Contract
- e. Special Conditions of Contract
- f. General Specifications of Work
- g. Schedule of Quantities

I / We hereby tender for execution of the works referred to the in the aforesaid documents upon the terms and conditions contained or referred to therein and in accordance in all respects with the specifications, designs, drawings and other relevant details at the rate contained in the SCHEDULE OF QUANTITIES and within the period (s) of completion as stipulated in APPENDIX 'A' of the Special conditions of contract.

In consideration of I / we being invited to tender, I / we agree to keep the tender open for acceptance for 120 days from the due date of submission thereof and not to make any modification in its terms and conditions which are not acceptable to the Owner.

Online payment of **Rs. 1, 28, 885/- (Rs. One Lakh Twenty Eight Thousand Eight Hundred Eighty Five only)** be done as describing E-tender notice. If I / we fail to keep the tender open as aforesaid or make any modification in the terms and conditions of the tender which are not acceptable to the Owner, I / we agree that the Owner shall, without prejudice to any other right or remedy, be at liberty to forfeit the amount of the above said earnest money absolutely. Should this tender be accepted, I / we agree to abide by and fulfill all the terms, conditions and provisions of the aforesaid documents.

If, after the tender is accepted, I / we fail to commence the execution of the works, as provided in the Special Conditions of Contract / we agree that the Owner shall, without prejudice to any other right or remedy, be at liberty to forfeit the above said earnest money absolutely.

I / we agree that should the Owner decide to forfeit earnest money as aforesaid, unless a sum equal to the earnest money sanctioned above is paid by us forthwith, the Owner may, at its option, recover it out of the deposit and in the event of deficiency, out of any other money due to me/us otherwise.

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DULY AUTHORIZED TO SIGN THE TENDER:

(ON BEHALF OF THE CONTRACTOR)

ADDRESS : _____

DATE : _____

PHONE NUMBER : _____

EMAIL ADDRESS : _____

WITNESS : _____

SIGNATURE IN THE CAPACITY OF : _____

ADDRESS : _____

DATE : _____

PRE-QUALIFICATION OF TENDERERS

Pre-Qualification of the Contractors for the Work of: Interior and Furniture Work of Jankidevi Bajaj Institute of Management Studies Building for Shreemati Nathibai Damodar Thackersey women's university, Pune Campus.

1. The Registrar, on behalf of the Vice Chancellor, SNTD Women's University, invited eligibility documents from firms/contractors of repute for Pre-qualification of the contractor for issue of tender for the following:

Sr. No.	Name of Work	Estimated Cost	Period of Completion
(1)	(2)	(3)	(4)
1.	Interior and Furniture Work of Jankidevi Bajaj Institute of Management Studies Building for Shreemati Nathibai Damodar Thackersey Women's University, Pune Campus.	Rs.1,28,88,546.20/-	07 months

2. Application supported by prescribed annexure along with supporting documents in physical form, shall be placed in sealed envelopes marked "**Pre-qualification Eligibility Documents**" and shall be submitted as described in Detail Tender notice.

3. Final Decision Making Authority

SNTD Women's University reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the parties.

4. General:

4.1. All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the party, it should be stated as "not applicable" or "N.A.". The parties are cautioned that not giving true and complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information shall result in the summarily disqualifying the party. Pre-qualification documents received late will not be entertained.

4.2. Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialing, dating and rewriting. Pages of the eligibility criteria document shall be numbered. Additional sheets, if any added by the party, shall also be numbered. All the documents shall be sealed and signed by the party. They shall be submitted as a package with signed letter of transmittal.

4.3. References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the party shall be submitted along with the tender documents.

4.4. The party may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. It is, however,

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advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the SNTD Women's University.

4.5. Any information furnished by the party found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering/taking up of work in SNTD Women's University. If such party happens to be enlisted contractor in SNTD Women's University, it shall also be removed from the approved list of contractors.

5. Criteria for eligibility:

Contractors who fulfill the following requirements shall be eligible for pre-qualification.

5.1. Should have satisfactorily completed the works as mentioned below during the last 5 years ending 31st March 2018

5.1.1. Average Annual turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 30% of the estimated cost or more.

5.1.2. Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:

a) Three similar completed works costing not less than the amount equal to 40% of the estimated cost

OR

b) Two similar completed works costing not less than the amount equal to 50% of the estimated cost

OR

c) One similar completed work costing not less than the amount equal to 80% of the estimated cost.

5.1.3. Definition of "similar work" should be clearly defined.

5.2. Should not have incurred any loss in more than two (2) years during the last 3 years ending 31st March 2018. This should be duly audited by a Chartered Accountant.

5.3. Should have a solvency of 3.25 Crore, which should be certified by the bank.

5.4. Should have own constructions equipment as per list required for the proper and timely execution of the work. Else, he should certify that he would be able to manage the equipment by hiring etc., and submit the list of firms from whom he proposes to hire.

5.5. Should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The party should submit a list of these employees stating clearly how these would be involved in this work.

5.6. Financial information

5.6.1. Party should furnish the Annual financial statement for the last three (3) years.

5.6.2. Party should furnish solvency certificate in Form "B".

5.7. Experience in works highlighting experience in similar works

5.7.1. Party should furnish list of all works of similar nature successfully completed during the last Five years in Form "C".

5.7.2. Party should furnish list of the projects under execution or awarded in Form "D".

5.7.3. Particulars of completed works and performance of the party duly authenticated/certified by an officer not below the rank of University Engineer or equivalent should be furnished separately for each work completed or in progress in Form "E".

6. Selection criteria

6.1. SNTD Women's University reserves the right, without being liable for any damages or obligation to inform the party to reject any or all the applications without assigning any reason.

6.2. Any effort on the part of the party or his Supervisor to exercise influence or to pressurize the SNTD Women's University would result in rejection of his application. Canvassing of any kind is prohibited.

6.3. The party should disclose details of arbitration / litigation cases, if any, is pending or in progress. Hiding of such information would result in summarily rejection of his bid without assigning any reason.

Form B

Form of Bankers' Certificate from a Nationalized/Scheduled Bank for Certifying the Solvency of the Party

This is to certify that to the best of our knowledge and information that M/s.....having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement upto a limit of

`

Rupees

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

Date:

(Signature)

Authorized Bank Representative

Notes:

- 1 Banker's certificates should be on letter head of the Bank.
- 2 In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

Form E

Performance Report of Works Referred to in Form C & Form D

- 1 Name of the work / project location :
- 2 Agreement No. :
- 3 Estimated Cost :
- 4 Tendered Cost :
- 5 Date of Start of Work :
- 6 Date of Completion of Work :
- i Stipulated Date of Completion :
- ii Actual Date of Completion :
- 7 Amount of compensation levied for delayed completion, if any :
- 8 Amount of reduced rate items, if any :
- 9 Performance Report :
- i Quality of Work : Very Good / Good / Fair / Poor
- ii Financial Soundness : Very Good / Good / Fair / Poor
- iii Technical Proficiency : Very Good / Good / Fair / Poor
- iv Resourcefulness : Very Good / Good / Fair / Poor
- v General Behaviour : Very Good / Good / Fair / Poor

Date:

(Signature)
Authorized Client's Representative

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ARTICLES OF AGREEMENT

Agreement made at Mumbai this _____ day of 2018 BETWEEN "The Registrar, SNTD Women's University, Mumbai" (hereinafter referred to as the Owner which expression shall include it **successors and assigns**) of the one part, AND, M/s _____ (hereinafter referred to as the Contractor which expression shall include his heirs, Executors, Administrators & Assigns) of the other part.

WHEREAS the Owner is desirous of **E-TENDER FOR INTERIOR AND FURNITURE WORK OF JANKIDEVI BAJAJ INSTITUTE OF MANAGEMENT STUDIES BUILDING FOR SHREEMATI NATHIBAI DAMODAR THACKERSEY WOMEN'S UNIVERSITY, PUNE CAMPUS. NET TOTAL COST: Rs. _____**

(In words Rs. _____ AND WHEREAS the Contractor has deposited as Security Deposit a sum of Rs. _____ (Rs. _____) with the owner for the due performance of this agreement **as per clause no. 1.1.10** of detail tender notice.

NOW IT IS HEREBY AGREED AS FOLLOWS:

- 1) In consideration of the payments to be made to the contractor as hereinafter provided, he shall upon and subject to the said conditions execute and complete the works shown upon the said drawings and such further detailed drawings as may be furnished to him by the University and described in the said specifications and the said priced schedule of quantities.
- 2) The Owner shall pay the contractor such sums as shall become payable hereunder at the times and in the manner specified in the said conditions.
- 3) The drawings, specifications, and priced schedule of quantities above mentioned shall form the basis of this contract and the decision of the Engineers for the time being as mentioned in the conditions of contract in reference to all matters of dispute as to the material, workmanship or account and as to the intended interpretation of clauses of this agreement or any other document attached hereto shall be final and binding on both parties and may be made a Rule of Court.
- 4) The said contract comprises the constructions above mentioned and all subsidiary works connected therewith within the said site as may be ordered to be done from time to time by the said University for the time being even though such works may not be shown on the drawings of described in the said specifications or the priced schedule of quantities.
- 5) The Owner reserves to himself the right of altering the drawings and nature of the work and adding to or omitting any items of the work or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall be carried out without prejudice to this contract.

Sign & Seal of Contractor

Corrections

University Engineer

INTERIOR AND FURNITURE WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY,
PUNE CAMPUS

- 6) The said conditions and appendix thereto shall be read and continued as forming part of this agreement and the parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their parts respectively in such conditions contained.
- 7) All disputes arising out of or any connected with this agreement shall be deemed to have arisen in Pune and only the Hon'ble Court in Pune shall have jurisdiction to determine the same.
- 8) The several parts of this contract have been read to us and fully understood by us.

As witness our hands this _____ day of 2018.

SIGNED BY THE SAID

OWNER

IN THE PRESENCE OF

1.

2.

SIGNED BY THE SAID

CONTRACTOR

IN THE PRESENCE OF

1.

2.

GENERAL CONDITIONS OF CONTRACT

1. COMPETANCY OF TENDER :

The work will be awarded only to those contractors who are considered to be substantially responsive bidders, capable of performing the class of work to be completed. Before passing the final award any or all bidders may have to show that they have the necessary experience, facilities, ability and financial resources to execute the work in satisfactory manner and also within the stipulated time.

2. PAYMENTS :

The tenderer must understand clearly that the rates quoted are for completed work and include all costs due to labour, all leads and lifts involved and if further necessitated, scaffolding plant, supervision, service works, power, royalties, octroi taxes etc. and to include all to cover the cost of lighting on night work if any and round the clock work as and when required and no claim for additional payment beyond the prices or rates quoted will be entertained and the tenderer shall not be entitled subsequently to make any claim on the ground of any representation or on any promise by any person (whether member in the employment of any University Department or not) or on the ground of any failure on his part to obtain all necessary information for the purpose of making his tender and fixing the several prices and rates therein relieve him from any risks or liabilities arising out of the tender.

(a) RUNNING BILLS :

Two payments in a month will be granted by the University Engineer if the progress is satisfactory. Contractor should submit bills to the University Engineer in appropriate forms.

(b) FINAL BILLS:

The contractor should submit final bill within one month after completion of the work and the bill will be paid within 5 months if it is in order. Disputed item and claims if any shall be excluded from the final bill and settled seperately leter on.

3. ERASER :

Persons tendering are informed that no erasers of any alterations by them in the text of the documents set herewith will be allowed and any such eraser or an alteration will be disregarded. If there is any error in writing, no overwriting should be done but the wrong words or figures should be struck out and the correct one written above or near it in an unambiguous way. Such correction should be initialed and dated. Only Tender submitted on portal will be considered admissible and no claim shall be entertained on correction made on hard copy.

4. ACCEPTANCE :

Intimation of acceptance of tender will be given by a telegram or on phone or a letter sent by Registered Post to the address given below the signature of the tenderer in the tenders. The tenders which do not fulfill any of the above conditions or those in the form and which are incomplete in any respect shall be liable for rejection.

5. PRECAUTIONS TO BE TAKEN BY THE CONTRACTOR TO PREVENT ACCIDENT :

- i) No live electric lines should be allowed to run along the ground in the blasting zone and they should be at least about 10 ft. above ground if not more.
- ii) The wiring cable should not be taken near the live electric line and it should be preferably shot firing cable as supplied by the supplier of explosives. If such a cable is not available a substitute cable recommended by the explosive suppliers should only be used. Under no circumstances should cable made up of several pieces jointed and tapper be used.
- iii) The blasting shed from where the exploder is to finally operated should be at least 150 metre away from the area to be blasted. It should have a strong roof which can with stand the impact of flying stones at this range.
- iv) Only trained hands should be allowed to handle explosives, cable detonators etc.

6.1 CONTRACTOR TO INFORM HIMSELF FULLY :

The contractors shall be deemed to have carefully examined the work and site conditions including labour, the general and special conditions, the specifications, schedules and drawings and shall be deemed to have visited the site of the work and to have fully informed himself regarding the local conditions and carried out his own investigations to arrive at the rates quoted in the tender. In this regard, he will be given necessary information to the best of the knowledge of Department but without any guarantee about it.

If he shall have any doubt as to the meaning of any portion of these general conditions or the special condition, to the scope of working of the specifications and drawings or any other matter concerning the contract, he shall in good time, before submitting his tender, set forth the particulars thereof and submit them to the Engineer in writing in order that such doubts may be clarified authoritatively before tendering. Once a tender is submitted, the matter will be decided in accordance with tender conditions in the absence of such authentic pre-clarification.

6.2 ERROR, OMISSIONS AND DISCREPANCIES :

- (A) In case of errors, omissions and /or disagreement between written and scaled dimensions in the drawing or between the drawings and specifications etc., The following order of preference shall apply.
 - (I) Between actual scaled and written dimensions or descriptions on a drawing, the latter shall be adopted.

Sign & Seal of Contractor

Corrections

University Engineer

- (II) Between the written or shown description of dimensions in the drawing and corresponding one in the specifications, the latter shall apply.
 - (III) Between the quantities shown in schedule of quantities and those arrived at from the drawings, the latter shall be preferred.
- (B)** In all cases of omission and / or doubts of discrepancies in the dimensions or description of any item or specifications, a reference shall be made to the Engineer, whose elucidation, elaboration or decision shall be considered as authentic. The contractor shall be held responsible for any errors that may occur in the work through lack of such reference and precaution.

6.3

WORKING METHODS AND PROGRESS SCHEDULES :

- (a)** The Contractor shall submit within the time stipulated by the Engineer-in-charge in writing the details of actual methods that would be adopted by the Contractor for the execution of any item as required by Engineer at each of the location, supported by necessary detailed drawing and sketches including those of the plant and machinery that would be used, their locations, arrangement for conveying and handling materials etc. and obtain prior approval of the Engineer-in-charge well in advance of starting of such item of work. The Engineer-in-charge reserves the right to suggest modifications or make corrections in the method proposed by the contractor, whether accepted previously or not, at any stage of the work to obtain the desired accuracy, quality and progress which shall be binding on the contractor. No claim on account of such change in method of execution will be entertained by Government so long as specifications of the item remain unaltered. The full responsibility for the safety and adequacy of the methods adopted by the contractor shall however, rest on the contractor, irrespective of any approved given by the Engineer.

In case of slippage from the approved work programme at any stage, the contractor shall furnish revised programme to make up the slippage within the stipulated time schedule and obtain the approval of the Engineer to the revised programme.

PROGRESS SCHEDULE

- (b) The Contractor shall furnish within the period stipulated in writing by the Engineer-in-charge of the order to start the work, progress schedule using PERT/CPM technique in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and anticipated completion date of each major item of work to be done by him, also indicating and setting up materials, plants and machinery. The schedule is to be such as is practicable of achievement towards the completion of the whole work in the time limit and of the particular items, if any on the due date specified in the contract and shall have the approval of the Engineer-in-charge. No revised schedule shall be operative without such acceptance in writing. The Engineer is further empowered to ask for more detailed schedule or schedules in weekly form, for any item or items, in any case of urgency of work as will be directed by him and the contractor shall supply the same as and when asked for.
- (c) The Contractor shall employ sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours restricted to one shift a day for operations to be done under the Government supervision shall be such as may be approved by the Engineer-in-charge. They shall not be varied without the prior approval of the Engineer. Night work requiring supervision shall not be permitted except when specifically allowed by Engineer on each item, if requested by Contractor. The Contractor shall provide necessary lighting arrangements etc. for night work as directed by the Engineer without extra cost to Government.
- Further, the contractor shall submit the progress of work in prescribed forms and charts etc. at periodical intervals, as may be specified by the Engineer-in-charge. Schedule shall be in the form of progress charts, forms, progress statement and/or reports as may be approved by the Engineer. The contractor shall maintain proforma, charts, details regarding machinery, equipment, labour, materials, personnel etc. as may be specified by the Engineer and submit periodical returns thereof as may be specified by the Engineer-in-charge.
- (d) The Contractor shall be required to give a trial run of the equipment's for establishing, their capability to achieve the laid down specifications and tolerance to the satisfaction of the Engineer before commencement of the work. All equipment provided shall be of proven efficiency and shall be operated and maintained at all times, in a manner acceptable to the Engineer and no equipment or personnel will be removed from site without permission of the Engineer.

6.4 TREASURE TROVE :

In the event of discovery by the Contractor or his employees, during the progress of the works of any treasure, fossils, minerals or any other articles or value of interest, the Contractor shall give immediate intimation thereof to the Engineer such treasure of things which shall be the property of the Government.

6.5 SUPERVISOR AND WORK ORDER BOOKS :-

The contractor shall himself engaged an authorized all time Supervisor on the work who will be capable of managing and guiding the work and understand the specifications and contract condition. A qualified and experienced, Engineer shall be employed by the contractor as his Supervisor for technical matters in case the Engineer-in-charge considers this as essential for the work and so directs contractors. He will take orders as will be given by the University Engineer or his representative and shall be responsible for carrying them out.

This Supervisor shall not be changed without prior intimation to the University Engineer and his representative on the work site. The University Engineer has the unquestionable right to ask for change in the quality and strength of contractor's supervisory staff and to order removal from work of any of such staff. The contractor shall comply with such orders and effect replacements to the satisfaction of the University Engineer.

A work order book shall be maintained on site and it shall be the property of the University and the contractor shall promptly sign orders given therein by the University Engineer or his representative and his superior officers and comply with them. The compliance shall be reported by the Contractor to the Engineer in good time so that it can be checked. The blank work order with machine numbered pages will be provided by the Department free of charge for this purpose. The contractor will be allowed to copy out instructions therein from time to time. The order issued by the Government in University from time to time regarding Construction procedure shall be binding on the contractor in addition to the specifications contained in P.W.D. hand book Volume I and II and book of standard specification of P.W. Department and the specifications enumerated above.

6.6 INITIAL MEASUREMENTS FOR RECORD:-

Where for proper measurement of work, it is necessary to have initial set of levels or other measurements taken, the same as recorded in the authorized field book or measurement book of University by the Engineer or his authorized representative will be signed by the Contractor who will be entitled to have a true copy of the same made at his cost. Any failure on the part of the Contractor to get such levels etc. recorded before starting the work will render him liable to accept the decision of the Engineer as to the basis of taking measurements. Like-wise the Contractor will not cover any work which will render its subsequent measurements difficult or impossible without first getting the same jointly measured by himself and the authorized representative of the University Engineer. The record of such measurements on the Government side will be signed by the Contractor and he will be entitled to have a true copy of the same made at his cost.

6.7 HANDING OVER OF WORK :

All the works and materials before finally taken over by University it will be the entire liability of the Contractor to guard, maintain and make good any damage of any magnitude. Interim payments made for such work will not alter this position. The handing over by the Contractor and taking over by the University Engineer or his authorized representative will be always in writing copies of which will go to the University Engineer or his authorized representative and the Contractor. It is however, understood that before taking over such work, Government will not put it into regular use as distinct from casual or incidental one, except as specifically mentioned elsewhere in this contract, or as mutually agreed to.

6.8 ASSISTANCE IN PROCURING PRIORITIES, PERMITS ETC :

The Engineer on a written request by Contractor will, if in his opinion the request is reasonable and in the interest of work and its progress, assist the Contractor in securing, the priorities for deliveries, transport, permits for controlled materials etc. where such are needed. The University will not however be responsible for the non-availability of such facilities or delays on this behalf and no claims on account of such failure of delays shall be allowed by the University.

The Contractor shall have to make his own arrangement for machinery required for the work.

7. SAMPLES AND TESTING OF MATERIALS :

- i All materials to be used on work, such as cement, lime, aggregates, stone, asphalt, etc. shall be got approved in advance from the Engineer-in-charge and shall pass the tests and analysis required by him, which will be :
 - (a) as specified in the specifications of the items concerned and / or
 - (b) Red book
 - (c) as specified by the Indian Road Congress Standard Specification and code of practice for Road and Bridges or

- (d) I.S.I. Specifications (whichever and wherever applicable) or
 - (e) As per M.O.R.T. & H specifications for Roads and Bridges latest edition Section 900 quality control for road work.
 - (f) Such recognized specifications acceptable to the University Engineer as equivalent there to or in the absence of such authorized specifications.
 - (g) Such requirements test and/or analysis as may be specified by the Engineer-in-charge in the order of procedure given above.
- ii The Contractor shall at his risk and cost make all arrangement and/or shall provide for all such facilities as the Engineer-in-charge may require for collecting, preparing required number of samples for test or analysis at such time and to such places as may be directed by Engineer and bear all such charges, such samples shall also be deposited with University Engineer.
 - iii The Contractor shall as and when required submit at his cost the samples of materials to be tested or analyzed and if, so directed, shall not make use of or incorporate in the work any material represented by the samples until the required test or analysis have been made and after the test of the materials, finally accepted by the Engineer-in-charge.
 - iv The contractor shall not be eligible for any claim or compensation either rising out of any delay in the work or due to any corrective measure required to be taken on account of and as a result of testing of the materials.
 - v The contractor or his authorised representative will be allowed to remain present in the Department laboratory which testing the samples furnished by him. However the results of all the tests carried out in the Departmental laboratory whether in the presence or in absence of the contractor or his authorised representative will be binding on the contractor.
 - vi **Quality Control Tests :-**

The contractor shall at his own cost set up Laboratory at site of work to carry out the testing of materials which are to be used for the work. This laboratory shall be approved by the University Engineer. The testing shall be done as per frequencies mentioned in the specification/additional specification of each item of Schedule 'B'. The 30% of the test included in **Annexure 'A' (On Page No. 55)** shall be carried out in Vigilance and Quality Control Laboratory at the cost of contractor and balance 70% in the site laboratory. The test which are not included in Annexure 'A' 50% test shall be carried out each in Vigilance and Quality Control laboratory and site laboratory. The frequency of testing of construction materials is mentioned in **Annexure-B on Page No. 56 to 57.**

- vii** In case of material procured by the contractor, testing as required by the Codes and Specifications shall be arranged by him at his own cost. Testing shall be done in the presence of authorized representative of the **University Engineer**, at the nearest approved laboratory. If additional testing other than as required by specification is ordered, the testing charges, shall be borne by the Department, in case the test results are satisfactory and by the contractor if the same are not satisfactory.
- viii** In case of materials specified by the Government, if the contractor demands certain testing, the charges thereof shall be paid by the contractor if the testing results are satisfactory and the Department if the same are not satisfactory.
- ix** Contractor shall have testing machinery/apparatus in his possession.

(As Applicable for Work)

7.1 QUALITY CONTROL ON WORKS AND MATERIALS :

The Contractor shall be responsible for the quality of the work in the entire construction work within the contract. He shall, therefore, have his own independent and adequate set up for ensuring the same. This shall include establishing field laboratory for testing required for works. The laboratory shall be equipped with the equipment's and apparatus required for the testing. This equipment's shall be in working condition. The University Engineer of the work will verify these equipment's in the laboratory at site. The work shall not be started unless and until the laboratory is equipped with equipment's.

7.2 CO-ORDINATION :

When several agencies for different sub-works of the project are to work simultaneously on the project site, there must be full coordination between the contractors to ensure timely completion of the whole project smoothly. The scheduled dates for completion specified in each contract shall therefore, be strictly adhered to. Each contractor may make his independent arrangements for water, power, housing etc. if they so desire. On the other hand the Contractor are at liberty to come to mutual agreement in this behalf and make joint arrangements with the approval of the Engineer. No Contractor shall take or cause to be taken any steps or action that may cause disruption, discontent, or disturbance of work, labour or arrangement etc. of the contractor in the project localities. Any action by any Contractor which the Engineer in his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the contract conditions and shall be dealt-with accordingly.

In case of any dispute of disagreement between the Contractors, the Engineer's decision regarding the co-ordination, co-operation and facilities to be provided by any of the Contractor shall be final and binding on the contractors concerned and such a decision shall not vitiate any contract nor absolve the Contractor of his obligations under the contract nor consider from the grounds for any claim or compensation.

7.3 TEMPORARY QUARTER AND SITE OFFICE

- I)** The Contractor shall at his own expense maintain sufficient experienced supervisory staff etc. required for the work and shall make his own arrangements for housing such staff with all necessary amenities outside the University campus.
- II)** The contractor shall provide furnish, maintain and remove on completion of the work; a suitable office on the work site for the use of University Engineer or his representative. The covered area exclusive of verandah should not be less than 40.00 sqm. It may have brick walls and asbestos or corrugated iron roof; paved floor should be 45 cm. above ground level. He should provide latrines, urinals and keep them clean daily. This will be supposed to be included in his offer.

7.4 PATENTED DEVICES, MATERIALS AND PROCESSES :

When the Contractor desires to use any designed device, materials or process covered by letter of patent or copy right, the right for such use should be secured by suitable legal arrangement and agreement with patent owner and a copy of their agreement shall be filed with the University Engineer if so desired by the latter.

7.5 WATER SUPPLY :

Availability of adequate water for works and sources thereof shall be confirmed by the Contractor before submitting the tender.

The Contractor shall make his own arrangements at his own cost for entering into contract with concerned authorities for obtaining the connection and carry the water up to the work site as required by him. The location of the pipe line with respect to the road shall be decided by University engineer and shall be binding on the Contractor.

The Contractor is advised to provide water storage tank of adequate capacity to take care of possible shutdown of water supply system.

7.6 ELECTRICITY :

The Contractor will have to make his own arrangement at his own cost for obtaining or providing electric supply at work site.

Electrical supply for the University use at work site shall be provided by the contractor. No charges would be payable by the University.

8. SAFETY MEASURES AND AMENITIES :

8.1 SAFETY MEASURES :

The Contractor shall take all necessary precautions for the safety of the workers and preserving their health while working on such job as require special protection and precautions wherever required. The following are some of the requirements listed, through not exhaustive. The contractor shall also comply with the directions issued by the Engineer in this behalf from time to time and at all times.

- (i) Providing protective foot-wear to workers, in situations like mixing and placing of mortar or concrete, in quarries and place where the work is to be done under too much wet conditions as also for movements over surfaces infected with oyster growth etc.
- (ii) Providing protective head wear to workers, working in quarries etc. to protect them against accidental fall of materials from above.
- (iii) Taking such normal precautions like providing hand rails to the edges of the floating platform or barges, not allowing nails or metal parts or useless timber to spread around etc.

8.2 AMENITIES :

- (i) Supporting workmen with proper belts, ropes etc. when working on any masts, cranes, grabs, hoist, dredger etc.
- (ii) Taking necessary steps towards training the workers concerned of the use of machinery before they are allowed to handle it independently and taking all necessary precautions in and around the areas where machines, hoists and similar units are working.
- (iii) Avoiding bare live-wires etc. as would electrocute workers.
- (iv) Making all platforms, stagings and temporary structures sufficiently strong and not causing the workmen and supervisory staff to take undue risks.
- (v) Providing sufficient first aid trained staff and equipment to be available quickly at the work site to render immediate first aid treatment in case of accidents due to suffocation, drowning and other injuries.
- (vi) Providing full length gum boots, leather hand gloves, leather jackets with fireproof aprons to cover the chest and black reaching up to knees plain goggles for the eyes to the labour working with hot asphalt handling vibrators in cement concrete and also where use of any or all these items is, essential in the interest of health and well being of the labourers in the opinion of the Engineer.

8.3 EXPLOSIVE :

The Contractor shall at his own expense construct and maintain proper magazines, if such are required for the storage of explosives for use in connection with the work and such magazines, being situated constructed and maintained in accordance with the Government Rules applicable in that behalf. The Contractor shall at his own expenses obtain such license or licenses as may be necessary for storing and using explosives. Notwithstanding that the location etc. or storage of explosives are approved by the Engineer, the University, shall not bear any responsibility whatsoever in connection with the storage and use of explosives on the site or any accident or occurrence what-so-ever in connection, therewith, all operations of the Contractor in or for which explosives employed being at the risk of contractor and upon his sole responsibility and the Contractor hereby gives to University an absolute indemnity in respect thereof.

8.4 DAMAGE BY FLOODS OR ACCIDENTS :

The contractor shall take all precautions against damage by floods or from accident etc. No compensation will be allowed to the Contractor on this account or for correcting and repairing any such damage to the work during construction. The Contractor shall be liable to make good at his cost any plant or materials belonging to the University lost or damaged by floods or from any other cause while is in his charge.

8.5 RELATION WITH PUBLIC AUTHORITIES:

(i) The Contractor shall comply with all rules, regulations, bye-laws and directions given from time to time by any local or public authority in connection with this work and shall himself pay all charges which are leviable on him without any extra cost to the University.

(ii) **POLICE PROTECTION:**

For the Special Protection of camp of the Contractor's works, the University will help the Contractor as far as possible to arrange for such protection with the concerned authorities, if so required by the contractor in writing. The full cost of such protection shall be borne by the Contractor.

8.6 INDEMNITY :

The Contractor shall indemnify the University against all actions, suits, claims and demands brought or made against it in respect of anything done of committed to be done by the contractor in execution of or in connection with the work of this contract and against any loss or damage to the University in consequence to any action or suit being brought against the Contractor for anything done or committed to be done during the execution of this contract.

The University may at its discretion and entirely at the cost of the contractor defend such suit, either jointly with the Contractor or single in case the latter chooses not to defend the case.

8.7 MEDICAL AND SANITARY ARRANGEMENTS TO BE PROVIDED FOR LABOUR EMPLOYED IN THE CONSTRUCTION BY THE CONTRACTOR

- a) The Contractor shall provide an adequate supply of pure and wholesome water for the use of labourers on work and in camps.
- b) The Contractor shall construct trench or semi-permanent latrines for the use of the Labours. Separate latrines shall be provided for men and women.
- c) The Contractor shall build sufficient number of huts on a suitable plot of land for use of the labourers according to the following specifications :-
 - 1. Huts with Bamboo's and Grass may be constructed.
 - 2. A good site not liable to submergence shall be selected on high ground remote from jungle but well provided with tress, shall be chosen wherever it is available. The neighborhood of tank, jungle, trees or wood should be particularly avoided; Camps should not be established close to large cutting of earth work.
 - 3. The lines of huts shall have open space of atleast ten metres between rows. When a good natural site cannot be procured, particular attention should be given to the drainage.
 - 4. There should be no over crowding. Floor space at the rate of 3 Sq. metre per head shall be provided. Care should be taken to see that the huts are kept clean and in good order.
 - 5. The University does not bind itself for making available the required land to the contractor for labour campus.
 - a) The Contractor shall construct a sufficient number of bathing places, Washing places should also be provided for the purpose of washing cloths.
 - b) The Contractor shall engage a Medical Officer with a travelling dispensary for a Camp containing 500 or more persons if there is no Government or other private dispensary situated with 8 Kms. from the camp. In case of emergency the Contractor shall arrange a this cost of transport for quick medical help to his sick worker.

- c) The Contractor shall provide the necessary staff for effecting satisfactory conservancy and cleanliness of the camp to the satisfaction of the University Engineer. At least one sweeper per 200 persons should be engaged.
- d) The Assistant Director of Public Health shall be consulted before opening a labour camp and his instruction on matters such as water supply, sanitary conveniences, the camp site accommodation and food supply shall be followed by the Contractor.
- e) The Contractor shall make arrangements for all ant malarial measures to provide for the labours employed on the work. The ant malarial measures shall be provided as directed by the Assistant Director of Public Health.
- f) The anti-malaria and other health measures shall be as directed by the Joint-Director (Malaria and Filarial) Health Services, Pune.
- g) Contractor shall see that mosquitogenic conditions are not created so as to keep vector populations to minimum level.
- h) Contractor shall carry out anti-malaria measures in the area as per guidelines prescribed under National Malaria Eradication Programme and as directed by the Joint Director, (M & F) of Health Services Pune.
- i) In case of default in carrying out prescribed antimalaria measures resulting in increase in Malaria incidence, contractor shall be liable to pay to Government the amount spent by Government on anti-malaria measure to control the situation in addition to fine.
- j) The Contractor shall make sufficient arrangements for draining away the surface and sullage water as well as water coming from the bathing and washing places and shall dispose off this waste water in such way as not to cause any nuisance. He shall also keep the premise clean by employing sufficient number of sweepers.
- k) The Contractor shall comply with all rules, regulation bye-law and directions given from time to time by any local or public authority in connection with this work and shall pay fees or charges which are leviable on him without any extra cost to Government.

- l) In addition to above all provisions of the relevant labour act pertaining to basic amenities to be provided to the labourer shall be applicable which will be arranged by the Contractor.

9. MISCELLANEOUS :

- 9.1** For providing electric wiring or water lines etc. recesses shall be provided if necessary through walls, slabs, beams etc. and later on refilled it with bricks or stones, chipping cement mortar without any extra cost.
- 9.2** In case it becomes necessary for the due fulfillment of contract for the Contractor to occupy land outside the Department limits, the Contractor will have to make his own arrangements with the land owners and pay such rents, if any, are payable as mutually agreed between them.
- 9.3** The Contractor shall duly comply with the provision of the Apprentices Act 1961 (iii of 1961) and the rules and orders made thereunder from time to time under the said Rules and on his failure or neglect to do so he shall be subject to all the liabilities and penalties provided by the said Act and Rules.
- 9.4** It is presumed that the Contractor has gone carefully through the Standard Specification (Vol. I & II 1981 Edition) M.O.R.T. & H specifications (edition 2001) and Schedule of Rate of the PWD division, and studied the site conditions before arriving at rates quoted by him. The special provisions and detailed specification of wording of any item shall gain precedence over the corresponding contrary provisions (if any) in the standard specification given without reproducing the details in contract. Decision of University Engineer shall be final in case of interpretation of specification.
- 9.5** If the standard specifications fall short for the items quoted in the schedule of this contract reference shall be made to the latest Indian Standard specifications, I.R.C. codes. If any of items of this contract do not fall in reference quoted above, the decision and specifications as directed by the Engineer-in-charge shall be final.
- 9.6** The stacking and storage of building materials at site shall be in such a manner as to prevent deterioration or inclusion of foreign materials and to ensure the preservation of the quantity, properties and fitness of the work. Suitable precautions shall be taken by Contractor to protect the materials against atmospheric action fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likelihood of subsidence of soil, heavy materials shall be stored on paved platforms. Suitable separating barricades and enclosure as directed shall be provided to separate materials brought by contractor and from different sources of supply.

10. DEFINITIONS :

Unless excluding by or repugnant to the context :

Sign & Seal of Contractor

Corrections

University Engineer

- a) The expression "University" as used in the tender documents shall mean the **"Shreemati Nathibai Damodar Thackersey Women's University"**.
- b) The expression "The University Engineer" as used anywhere in the tender papers shall mean officer for the time being of the SNTD Women's University who is designated as such.
- c) The expression "Engineer" or "Engineer-In-Charge" as used in the tender papers shall mean the University Engineer of the work.
- d) The expression "Contractor" as used in the tender papers shall mean the successful tenderer that is the tenderer whose tender has been accepted, and who has been authorised to proceed with the work.
- e) The expression "Contract" as used in the tender papers shall mean the deed of contract together with or its original accompaniment and those later incorporated in it by mutual consent.
- f) The expression "Plant" as used in the tender papers shall mean very temporary and necessary means necessary or considered necessary by the Engineer to execute, construct, complete and maintain the works and used in altered, modified, substituted and additional works ordered in the time and in the manner herein provided and all temporary materials and special and other articles of appliances of every sort, kind and description whatsoever intended or used therefore.
- g) The expression "Department" as used in the tender papers shall mean Estate Department of the University.
- h) The "Accepting authority" shall mean the officer competent to accept the tender.
- i) The "Site" shall mean the land and/or other places where the work is to be executed under the contract including any other land or places which may be allotted by the University or use for the purpose of contract.

11. TESTING ETC. :

The Contractor shall be responsible for the quality of the work in the entire construction work within the contract. He shall, therefore, have his own independent and adequate setup for ensuring the same. This shall include establishing field laboratory for testing required for concrete works.

12. AUTHORITIES OF THE UNIVERSITY ENGINEER :

Save in so far as it is legally or physically impossible the Contractor shall execute, complete and maintain the works in strict accordance with the contract under the directions and to the entire satisfaction of the University Engineer and shall comply with and adhere strictly to the University Engineer instructions and directions on any matter (Whether mentioned in the contract or not) pertaining to this works.

The University Engineer shall decide all questions which may arise as to quality and acceptability of materials furnished and work executed, manner of execution, rate of progress of the works, interpretation of the plans and specifications and acceptability of fulfillment of the contract on the part of the Contractor. He shall determine the amount and quantity of work performed and materials furnished and his decision shall be final. In all such matters, and in any technical questions which may arise touching the contract, his decision shall be binding on the Contractor.

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

12.1 AUTHORITIES OF THE UNIVERSITY ENGINEER'S REPRESENTATIVE

The duties of the representative of the University Engineer are to watch and supervise the work and to test and examine any material to be used for workmanship employed in connection with the works.

12.2 The Engineer-in-charge may from time to time, in writing delegate to his representative any of the powers and authorities vested in the Engineer-in-charge and shall furnish to the Contractor a copy of all such delegations of powers and authorities. Any written instruction or approval given by the representative of the Engineer-in-charge to the Contractor within the terms of such delegations (but not otherwise) shall bind the Contractor and the Department as though it had been given by the Engineer-in-charge, provided always as follows.

- a) Failure of the representative of the Engineer-in-charge to disapprove any work or material shall not prejudice the power of the Engineer-in-charge thereafter to disapprove such work or materials and to order to pulling down, removal or breaking up thereof.
- b) If the Contractor is dissatisfied with any decision of the Representative of the Engineer-in-charge he shall be entitled to refer the matter to the Engineer-in-charge, who shall there upon confirm/reverse or vary such decision.

13. LAY OUT OF WORK :

Layout of the work will be done by the Contractor in consultation with the University Engineer of the Department or his representative, some permanent marks should however be established to indicate the demarcation of the structure or any component thereof made to this permanent marks in measurement books and drawing signed by the contractor and the departmental officer, Responsibility regarding layout will be joint.

14. SETTING OUT

14.1 BUILDING WORKS :-

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The Engineer-in-charge shall furnish the contractor with only the four corners of the works site and a level bench mark and the contractor shall set out the works and shall provide an efficient staff for the purpose and shall be solely responsible for the accuracy of such setting out.

The contractor shall provide, fix and be responsible for the maintenance of all stacks, templates, level marks, profile and other similar things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequence of such removal or disturbance, should the same take place and for their efficient and timely reinstatement. The contractor shall also be responsible for the maintenance of all existing survey marks, boundary marks distance marks and center line marks, either existing or supplied and fixed by the contractor. The work shall be set out to the satisfaction of the Engineer-in-charge. The approval thereof or joining with the contractor by the Engineer-in-charge in setting out the work, shall not relieve the contractor of any of his responsibilities.

Before beginning the work, the contractor shall at his own cost provide all necessary reference and level posts, pegs, bamboos, flags, ranging rods, strings and other materials for proper layout of the work in accordance with the scheme for bearing marks acceptable to the Engineer-in-charge. The center, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distinct mark at the center to enable the theodolite to be set over it. No work shall be started until all these points are checked and approved by the Engineer-in-charge in writing but such approval shall not relieve the contractor of any of his responsibilities. The contractor shall also provide all labour, material and other facilities, as necessary, for the proper checking of layout and inspection of the points during construction.

Pillars bearing geodetic marks located at the sites of units of works under construction should be protected and fenced by the contractor.

On completion of works, the contractor must submit the geodetic documents according to which the work was carried out.

14.2 RESPONSIBILITIES FOR LEVEL AND ALIGNMENT :

The contractor shall be entirely and exclusively responsible for the horizontal and vertical alignment, the levels and correctness of every part of the work and shall rectify effectually any errors or imperfections therein, such rectifications shall be carried out by the contractor, at his own cost, when instructions are issued to that effect by the University Engineer.

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

16. STACKING AND STORAGE AND GUARDING OF MATERIALS :

16.1 The stacking and storage of material at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and fitness for the work. Suitable precautions shall be taken by the Contractor to protect the materials against atmospheric action, fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likely hood of subsidence of soil, heavy materials shall be stored on paved platforms.

Suitable separating barricades and enclosures as directed shall be provided to separate materials brought by Contractor and materials issued by University to Contractor under Schedule "A" Same applies for the material obtained from different sources of supply.

16.2 The Contractor shall at his own expense engage watchman for guarding the materials and plant and machinery and the work during day and night against any pilferage or damage and also for prohibiting trespassers.

16.3 No materials brought to the site shall be removed from the site without the prior approval of the Engineer-in-charge.

17. INSPECTION OF WORKS

17.1 The Contractor shall inform the Engineer-in-charge in writing when any portion of the work is ready for inspection giving him sufficient notice to enable him to inspect the same without affecting the further progress of the work.

17.2 The Contractor shall provide at his cost necessary ladders and such arrangements as are considered safe by the Engineer-in-charge for proper inspection of all parts of the work.

17.3 Contractor shall extend his full co-operation and make all necessary arrangements when needed for carrying out inspection of the work or any part of the work by the University officials. No compensation shall be paid to the contractor on this account.

17.4 The work shall be carried out by the Contractor without causing damage to the existing University property and / or private property. If any such damage is caused, the Contractor shall pay for restoration of the property to the original conditions, and any other consequent damages.

17.5 In the event of the occurrence of an accident involving serious injuries or death of any person, at site of work or quarry or at any place in connection with the work the same shall be reported in writing within twenty four hours of the occurrence to the Engineer-in-charge and Commissioner of Workmen's compensation.

- 17.6 The Contractor after completion of work shall clean the site of all debris and remove all unused materials other than those supplied by the department and all plant and machinery, equipment, tools etc. belonging to him within one month from the date of completion of the work, or otherwise the same will be removed by the department at his cost or disposed off as per departmental procedure. In case the material is disposed off by the department, the sale proceeds will be credited to the Contractor's account after deducting the cost of sale incurred. However, no claim of Contractor regarding the price or amount credited will entertained afterwards.
- 17.7 All constructional plant, provided by the Contractor shall when brought on to the site be deemed to be exclusively intended for the construction and the contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the consent in writing of the Engineer-in-charge who shall record the reasons for withholding the consent.

18. RESTRICTIONS BECAUSE OF LOCAL TRAFFIC:

As there is local traffic by the side of construction during construction for the building, the Contractor will have to take proper precautions such as proper barricading, fencing, lighting, information and cautionary boards for safe and smooth flow of traffic, and keeping the concerned authorities informed about the work in progress.

19. COMPLETION CERTIFICATE :

- 19.1 The work shall not be considered to have been completed in accordance with the terms of the contract until the Engineer-in-charge shall have certified in writing to that effect. No approval of material or workmanship or approval of part of work during the progress of execution shall bind the Engineer-in-charge or in any way prevent him from even rejecting the work which is claimed to be complete and to suspend the issue of his certificate of completion until such alteration and modifications or reconstruction have been effected at the cost of the Contractor as shall enable him to certify that the work has been completed to his satisfaction.
- 19.2 After the work is completed the Contractor shall give notice of such completion to the Engineer-in-charge and within 30 days of receipt of such a notice the Engineer-in-charge shall inspect the work and if there is no defect in the work shall furnish the Contractor with a certificate indicating the date of completion. However, if there are any defects which in the opinion of the Engineer-in-charge are rectifiable he shall inform the Contractor the defects noticed. The Contractor after rectification of such defects shall then inform the Engineer-in-charge and Engineer-in-charge on his part shall inspect the work and issue the necessary completion certificate within 30 days if , the defects are rectified to his satisfaction, and if not, he shall inform the Contractor indicating defects yet to be rectified. The time cycle as above, shall continue.

- 19.3 In case defects noticed by the Engineer-in-charge which in his opinion are not rectifiable but otherwise work is acceptable at reduced payment, work shall be treated as completed. In such cases completion certificate shall be issued by the Engineer-in-charge within 30 days indicating the un-rectifiable defects for which reduction in payment is being made by him.
- 19.4 The issued of completion certificate shall not be linked up with the site clearance on completion of the work.

20. ANCILLARY WORK :

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

21. SPECIAL CONDITIONS:

- 21.1 The Contractor should ensure that all safety precautions are observed by their labourers, working closed to the State Highway and while closing the State Highway precautions are taken including insurance etc., for their labour at the cost of the contractor and the contractor will bear all the expenses, compensation etc. if any accident occurs to the labour etc. No claim in this regard on whatsoever account shall be entertained and this decision of the Department will be final and conclusive.
- 21.2 The Contractor shall observe the rules and regulation imposed by traffic police for smooth flow of traffic on the diversion road and shall not be entitled for claims any compensation arising thereof.

In case of delay in handing over the land required for the work, due to unforeseen cause, the Contractor shall not be entitled for any compensation what-so-ever form the Government on ground that the machinery or labour was idle for certain period. Contractor may, however apply for extension of time limit which may be granted on the merit of the case.

22. REJECTION OF MATERIALS NOT CONFORMING TO SPECIFICATIONS:

Any stock or batch of material(s) of which sample(s) does not conform to the prescribed test and quality, shall be rejected by the Engineer or his representative and such materials shall be removed from site by the Contractor at his own cost. Such rejected materials shall not be made acceptable by any modifications.

Materials not corresponding in character and Quality with approved samples will be rejected by the Engineer or his representative and shall be removed from site at the Contractor's own cost.

23. INSPECTION OF OPERATIONS :

The Engineer and any person authorised by him shall at all times have access to the works and to all workshops and places (including required documents) where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the Contractor shall afford every facility for & every assistance in or in obtaining the right to such access.

24. FIELD LABORATORY :

The Contractor shall arrange to provide a well furnished and fully equipped field laboratory which shall be manned by adequately qualified technical staff. The laboratory shall preferably be located adjacent to the plant site and shall be provided with amenities like water supply, electric supply, toilet block etc. The list of equipment is enclosed on Page No. 139. This shall be considered as incidental to work and no separate payment whatsoever will be made for the same.

25. SUPPLY OF COLOURED RECORD PHOTOGRAPHS AND ALBUMS:

The Contractor shall arrange to take dated post card size coloured photographs at various stages/facts of the work including interesting and novel features of the work as desired by the Engineer-in-charge and supply them in five copies each in separate albums of appropriate size. He shall also arrange for the Video Filming of important activities of the work during the currency of the contract and edit it to a video film of 60 to 180 minutes playing time.

It shall contain narration of the various activities in English/Marathi by a competent narrator. The cassette shall be of acceptable quality and the film shall be capable of producing color pictures. This shall be considered as incidental to the work and no additional payment whatsoever will be made for the same.

26. SUPPLY OF SAFETY JACKETS TO LABOURERS/ SUPERVISORS/ ENGINEERS

As a safety measure during the execution of work all labours, construction and supervisory staff shall be provided with an orange colour jacket in flouroscent blue so as to make them starkly visible from a distance even during evening hours.

27. APPROVAL OF CONSTRUCTION MATERIALS AND CONSTRUCTION ACTIVITIES:

Approval of all materials for the work shall be obtained in writing from Engineer-in-charge or his representative before its use in the Project.

Before taking up of any construction activity the construction work done earlier shall be got approved in writing. Any failure on this account may result in the work for which the Contractor will be solely responsible.

Materials and job mix, etc. shall be got approved in writing atleast 15 days in advanced of the commencement of the corresponding activity. The testing charges shall be borne by the Contractor.

Besides the prescribed tests and frequencies any other test of tests over the prescribed frequency shall also be carried out by the Contractor at his own cost if so directed by Engineer-in-charge or his authorised representative.

28. CONDITION RELATING TO INSURANCE OF CONTRACT WORK.

Contractor shall take out necessary Insurance Policy/ (viz. Contractors All Risks Insurance Policy, Erection All Risks Insurance Policy etc. as decided by the Directorate of Insurance) so as to provide adequate insurance cover for execution of the awarded contract work for total contract value and complete contract period compulsorily from the "Directorate of Insurance, Maharashtra State, Mumbai only its postal address for Correspondence is "264, MHADA, First Floor, Opp. Kalanagar, Bandra (East) Mumbai – 400051" (Telephone Nos. 26590403/26590690 and Fax No. 26592461/26590403) Similarly, all workmen's appointed to complete the contract work are required to insure under workmen's compensation insurance policy. Insurance policy/policies taken out from any other Company will not be accepted. If any contractor has effected Insurance with any insurance company the same will not be accepted and the amount of premium calculated by the Government Insurance Fund will be recovered directly from the amount payable to the Contractor for the executed contract work and paid to the Directorate of Insurance Fund, Maharashtra State, Mumbai, The Director of Insurance reserves the right to distribute the risks of insurance among the other insurers.

29. BUILDING AND OTHER CONSTRUCTION WELFARE CESS : (Deleted)

Building and other construction worker welfare cess at 1% or at the rates awarded from time to time as intimated by the competent authority of building and other construction worker welfare Act 1996 shall be deducted from bill amount. Whether bill advance payment or secured advance.

30. Goods and Services Tax will be recovered from the bill of the contractor as per GST Act.

31. DIARY:

Contractor shall maintain, throughout the construction period, a diary in the form of a register regarding the following :-

- i) Daily presence of all categories of labours.
- ii) Daily availability and use of machinery and equipment's on work.
- iii) Daily procurement, Consumption and balance of materials on site.
- iv) Daily record of various visiting authorities alongwith name of the officers visited and timing.
- v) Details of work executed per day. The register shall be closed on daily basis and signature of Engineers in charge or his representative should be taken over it.

32. ADDITIONAL TECHNICAL CONDITIONS

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- 32.1** The work shall be carried out in the best workmanship like manner and in strict accordance with P.W.D. hand book Volume I & II 1960. Edition supplemented by specification attached and as per Standard Specifications Book of Government of Maharashtra of 1979 and as per specific order of the University Engineer or his representative from time to time.
- 32.2** The orders issued by the Government in P.W. Department and the University Engineer from time to time regarding construction procedure shall be binding on the contractor in addition to the specification contained in tender document.
- 32.3** The contractor shall submit day to day account of the materials issued to him and its use and also monthly progress and programmed of work.
- 32.4** (a) The concrete mix design shall be got approved from University Engineer and the mix design shall give preliminary strength of 1.33 times working strength.
- (b) The maximum size of aggregate permissible would be as per A-7 page-8 of Standard Specifications Book 1979 Edition.
- 32.5** The items provided with watering for curing include continuous watering operations through out the day including lunch hours and also during holidays. For this purpose contractor shall have to construct tank of approx. 5000 liters capacity near each building and provide necessary Booster Pumps etc. to ensure adequate curing and wetting. Hold fasts coming in contact with R.C.C. columns shall be of sizes 30 cm x 4 cm to be fitted with two rows, nails fixed properly in concrete.
- 32.6** For all sand covering items, use of washed mixer sand (with sand washing machine) is obligatory. No separate claim in this regard will be entertained.
- 32.7** Material testing requirement frequency and type of testing is enclosed separately. Material to be used shall be tested accordingly and cost shall be borne by contractor.
- 32.8** For R.C.C. centering plywood and M.S. sheet of approved quality shall be used and adjustable props and fasteners shall be used.
- 32.9** The execution of any work from external side of the building 'H' frame steel scaffolding shall be used. No separate payment for claims in this regard shall be entertained.
- 32.10** The scaffolding shall not be supported on existing external walls of the building by making holes in it and also the scaffolds shall not rest on any part of the building.

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

33. Additional Performance Security:

1. Additional performance security is permitted to be accepted in the form of DD/FDR/BG of any Nationalized/Scheduled Bank. This shall be enclosed in the financial envelope (envelope no. 2) a self attested affidavit that 'Additional Performance Security is enclosed in envelope No.2' shall be included in the Technical Envelope No. 1 if the Additional Performance Security is not found included in envelope No. 2 (financial envelope) (in case which are fund below 1% of amount put to tender) the offer shall be treated as invalid and rejected forthwith.
2. Additional Performance Security of the successful bidder shall be returned immediately upon satisfactory completion of work, the certificate of which shall be issued by the EE before releasing the additional security.
3. Additional Performance Security for tenders below estimated costs shall be released on the day of opening of the financial bid except for L-1 and L-2. The Additional Performance Security of L-2 shall be released within time limit of 30 subsequent working days or award of work to L-1, whichever is later.

34. Contract Document

- 1.1. The following documents shall constitute the contract documents:
 - 1.1.1. Articles of Agreement.
 - 1.1.2. General Conditions of Contract.
 - 1.1.3. Specifications.
 - 1.1.4. Bills of Quantities.
- 1.2. The Contract Documents is complementary. What is called for in any one shall be has binding as is called for by all.
- 1.3. The Contract Document shall remain in the custody of the Owner so as to be available at all reasonable times for the inspection of the Owner or of the Contractor. Immediately after the execution of the contract one copy of the Contract Document and two copies of the Contract Drawings shall, without charge, be supplied by the Owner to the Contractor and one copy of the Contract Document to the Owner.

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- 1.4. So soon as is possible after the execution of this contract two copies of the Specifications, descriptive schedule or other like documents necessary for use in carrying the work shall without charge be supplied by the Owner to the Contractor.
- 1.5. Provided that nothing contained in the said Specifications, Descriptive schedules or other document shall impose any obligation beyond those imposed by the Contract Document namely by the Contract Drawing, the Contract Bills, the Articles of Agreement and these conditions. After the award of the Contractor the Contractor shall without charge be supplied with all such further drawings and details as may be prepared by the Owner and his Consultant, from time to time as the work proceeds as are reasonably necessary either to explain or amplify the Contract Drawings or to enable the Contractor to carry out and complete the work in accordance with these Conditions provided all such drawings shall be a reasonable development of the work described in the Contract Document.
- 1.6. The Contractor shall keep one copy of the Specifications, Descriptive schedule or other like document referred to in this clause and one copy of the contract Drawing and such other drawings and details supplied to him from time to time and referred to in this clause and written instructions referred to in this clause and clauses 9. and 30. at the site so as to be available to the Owner or his representative at all reasonable times.
- 1.7. None of the documents herein before mentioned shall be used by the Contractor for any purpose other than this contract and neither the Owner nor the Owner shall divulge or use except for the purpose of this contract any of the prices in the contract bills.
- 1.8. Upon final payment under the clause 31.6. of these conditions the Contractor shall if so requested by the Owner forthwith return to the Owner all Drawings, Details Specifications Descriptive Schedule and other Document of like nature which bears his name or that of the Consultant.

2. Type of Contract

- 2.1. The Contract shall be an Item rate contract. The Contractor shall be paid for the actual quantity of work done, as measured at site or as per drawing whichever is less, at the rates mentioned in the Contract.

3. Schedule of Quantities

- 3.1. The schedule of Quantities given in the Contract Bill is provisional and is meant to indicate the intent of the work and to provide a uniform basis for tendering. The Owner reserves the right to increase or decrease any of the quantities or to totally omit any item of work and the Contractor shall not claim any extras or damages on these grounds.
- 3.2. Any error in description or in quantity or omission of items from the Contract Bill shall not vitiate this Contract but shall be treated as a variation.

4. Contract Drawings

- 4.1. In general the Drawings shall indicate dimensions, position and type of construction; the Specifications shall indicate the qualities and the methods; and the Bill of Quantities shall indicate the quantum and the rate for each item of work. Any work indicated on the Drawings and not mentioned in Specification or vice versa shall be furnished as though

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fully set forth in both. Work not specifically detailed, called for marked or specified shall be the same as similar parts that a detailed marked or specified.

- 4.2. The Contractor's work shall not deviate from the Drawings and the Specifications. The Owner's interpretation of these documents shall be final and without appeal.
- 4.3. Errors or inconsistencies discovered in the Drawings and Specifications shall be promptly brought to the attention of the Owner, through the clerk of works, for interpretation or correction. Local conditions, which may affect the work, shall likewise be brought to the Owner's attention. If at any time, it is discovered that work is being done which is not in accordance with the Contract Drawings and Specifications, the Contractor shall correct the work immediately. Corrections of defective work shall not be basis for any claim for extension of time. The Contractor shall not carry on work except with the knowledge of the Clerk-of-works.
- 4.4. Figured dimensions on the scale Drawings and large size details shall govern. Large size details shall not precedence over small-scale drawings. Any work done before receipt of such details, if not in accordance with the same, shall be removed and replaced or adjusted, as directed by the Contractor without expense to the owner. The general conditions apply with equal force to all the work including authorized extra works.
- 4.5. All drawings, Bills of Quantities and Specifications and copies thereof furnished by the Owner are his property. They shall not be used on any other work and shall be returned to the Owner at his request on completion or termination of the Contract.
- 4.6. Reinforcing steel bar bending schedules shall if requested by the owner be furnished to the Owner at least fifteen days prior to the fabrication of the reinforcement.

5. Contract Sum

- 5.1. The contract sum shall not be adjusted or altered in any way whatsoever otherwise than in accordance with the express provisions of these conditions, and subject to clause 5.2. Of these conditions any error whether of arithmetic or not in the computation of the Contract sum shall be deemed to have been accepted by the parties hereto.

35. Claim for extra

- 1.1. When any instructions or decisions at site involve an extra or whereby the contractor may plan to claim an extra, it shall be the responsibility of the contractor to inform the Owner of the extra amount and get return authorization from the Owner before proceeding with the work involved.
- 1.2. Any modification carried out for expediting or simplifying work at the request of the contractor or his representatives shall not be taken as the basis for claiming an extra. However, if such modification shall also involve an extra, the rate for such modification shall be settled in advance and written authorization contained by the contractor from the Owner before proceeding with the work involved. If no such information is given by the contractor in writing to the owner such modification shall not be accepted as the basis for extra charge.

36. Extension

- 1.1. Upon it becoming a reasonably apparent that the progress of the works is delayed, the contractor shall forthwith give written notice of the cause of the delay to the Owner, and if in the opinion of the Owner the completion of the work is likely to be or has been delayed beyond that date for completion stated in the appendix to these conditions or beyond any extended time previously fixed under this clause.
- 1.1.1. By force majeure. Or
- 1.1.2. By reason of any exceptionally inclement weather. Or
- 1.1.3. By reason of loss or damage of occasioned by any one or more of the contingencies referred to in clause 47. of these conditions. Or
- 1.1.4. By reason of civil commotion, local combination of workmen strike or lockout affecting any of the trades employed upon the works or any of the trades engaged in the preparation, manufacture or transportation of any of the goods or materials required for the work. Or
- 1.1.5. By reason of Owner's instructions issued under clause 9, clause 30.1. or clause 38.2. of these conditions. Or
- 1.1.6. By reason of the contractors not having received in due time necessary instructions, drawings, details of levels from the Owner for which he specifically applied in writing on a date which having regard to the date for completion stated in the appendix to these conditions or to any extension of time then fixed under this clause was neither unreasonably distant from nor unreasonably close to the date on which it was necessary for him to receive the same. Or
- 1.1.7. By delay on the part of nominated sub-contractors or nominated suppliers which the contractor has taken all practicable steps to avoid or reduce. Or
- 1.1.8. By delay on the part of artists, tradesmen or other engaged by the owner in executing work not forming part of this contract. Or
- 1.1.9. By reason of the opening up for inspection of any work covered up or of the testing of any of the work, materials or goods in accordance with clause 37. of these conditions (including making good in consequence of such opening up or testing) unless the inspection of test showed that the work materials or goods were not in accordance with this contract. Or
- 1.1.10. By reason of the contractor's inability for reason beyond his control and which he could not reasonably have foreseen at the date of this contract to secure such labour goods or materials as are essential to the proper carrying out of the works.

Then the Owner shall as soon as he is able to estimate the length of the delay beyond the date or time aforesaid make in writing a fair and reasonable extension of time for completion of the works, provided always that the contractor shall use constantly his best endeavors to prevent delay and shall do that may reasonably be required to the satisfaction of the Owner to proceed with the work.

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37. Damages for non-completion

- 1.2. If the contractor fails to complete the works by the date specified in these conditions or within any extended time fixed under clause 39. of these conditions and the Owner certifies in writing that in his opinion the same ought reasonably so to have been completed, the contractor shall pay or allow the owner a sum calculated at the rate stated in the appendix as agreed liquidated damages for the period during which the said work shall so remain or have remained incomplete, the owner may deduct such damages from any monies otherwise payable to the contractor under this contract.

38. Virtual completion and defects liability period

- 1.1. When in the opinion of the Owner the works are practically completed, he shall forthwith issue a certificate to the effect and virtual completion of the works shall be deemed for all the purpose of this contract to have taken place on the day named in such certificate.
- 1.2. Any defects shrinkage or other faults which shall appear within the defects liability period stated in the appendix to this condition and which are due to materials and workmanship not in accordance with this contract shall be specified by the Owner in a schedule of defects which he shall deliver to the contractor not less than 14 days after the expiration of the said defects liability period and within a reasonable time of the receipt of such schedule the Defects Shrinkages and other faults therein specified shall be made good by the contractor and (unless the Owner shall otherwise instruct in which case the contract sum shall be adjusted accordingly) entirely at his own cost.
- 1.3. Notwithstanding sub-clause 42.2. of this condition the Owner may whenever he considers it necessary so to do, issue instructions requiring any defect, shrinkages or other fault which shall appear within the defects liability period named in the appendix to these conditions and which is due to materials and workmanship not in accordance with this contract to be made good and the contractor shall within a reasonable time after receipt of such instructions comply with the same (and unless the Owner shall otherwise instruct in which case the contract sum shall be adjusted accordingly) entirely at his own cost. Provided that no such instruction shall be issued after 14 days from the expiration of the said defects liability period.
- 1.4. When in the opinion of the Owner any defects shrinkages or other defaults which he may have required to be made good under sub-clause 42.2. and 42.3. of this condition shall 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.
- 1.5. In no case shall the contractor be required to make good at his own cost any damages which may appear after virtual completion of the work unless the Ownershall certify that such damages is due to injury which took place before virtual completion of the works.

39. Payments withheld

The Owner may withhold or on account of subsequently discovered evidence nullify the whole or a part of any certificate to such extent as may be necessary in his reasonable opinion to protect the owner from loss on account of:

- 1.1. Defective work not remedied.
- 1.2. Failure of the contractor to make payments properly to subcontractor or for materials or labour.
- 1.3. A reasonable doubt that the contract can be completed from the balance then unpaid.
- 1.4. Damage to another contractor or sub-contractor.
- 1.5. Claims filed on reasonable evidence indicating probable filing of claims.

When the above grounds are removed payment shall be made for amounts withheld because of them.

40. Labour

- 1.1. The contractor shall employ no child labour under 14 years of age on the work. If female labour is engaged these shall make necessary provision for safeguarding small children and keeping them clear of the site of operations. No labour shall reside within the compound except authorized guards.

41. Protections of trees and shrubs

- 1.1. Trees and shrubs designated by the Owner shall be protected from damage during the course of the work and the earth level shall not be changed within three feet of such tree. Where necessary such trees and shrubs shall be protected by means of temporary fencing.

42. Guarantee

- 1.1. Besides guarantee required elsewhere, the contractor shall guarantee the work in general for one year as noted under clause of the conditions.
- 1.2. All required guarantees shall be submitted to the Owner by the contractor when requesting certification of accounts for payment by the owner.

43. Arbitrator

- 1.1. All dispute and differences of any kind whatever arising out of or in connection with the contract or the carrying out of the works (whether during the progress of the works or after their completion and whether before or after the determination, abandonment or breach of the contract) shall be referred to and settled by the Owner who shall state his decision in writing. Such decision may be in the form of a Final certificate or otherwise. The decision of the Owner with respect of any of the excepted matters shall be final and without appeal. But if either the owner or the contractor be dissatisfied with the decision of the Owner on any matter, question or dispute of any kind (except any of the excepted matters) or as to the withholding by the Owner of any certificate to which the contractor may claim to be entitled then and in any such case either party (the owner or

the contractor) may within 28 days after receiving notice of such decision give a written notice to the other party through the Owner requiring that such matters in dispute be Arbitrated upon. Such written notices shall specify the matters which are in dispute and such dispute or difference of which such written notice has been given and no other shall be and is hereby referred to the Arbitration. Final decision of a single Arbitrator to be agreed upon and appointed by both the parties, or in case of disagreement as to the appointment of a single Arbitrator, to the Arbitration of two arbitrators one to be appointed by each party, which Arbitrators shall before taking upon themselves the burden of reference appoint presiding Arbitrator.

- 1.2. The Arbitrator, the Arbitrators as the case may be shall have power to open up review and revise any certificate, opinion, decision, requisition or notice save in regard to the excepted matters referred to in clause 55. and to determine all matters in dispute which shall be submitted to him or them and of which notice shall have been given as aforesaid.
- 1.3. Upon every or any such reference the cost of and incidental to the reference and award respectively shall be in the direction of the Arbitrator or Arbitrators or the umpire as the case may be who may determine the amount thereof or direct the same to be taxed as between Attorneys and clients or as between party and party and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to Arbitration within the meaning of the Indian Arbitration & Conciliation Act 1996 or any modification thereof for the time being in force, the award of the arbitrator or arbitrator's or the umpire as a case maybe shall be final and binding on the parties such reference except as to the withholding by the Owner of any certificates under clause 49. to which the contractor claims to be entitled shall not be open or entered upon until after the completion or alleged completions of the works or until after the practical cessation of the work arising from any cause unless with written consent of the owner and the contractor. Provided always that the owner shall withhold the payment of an interim certificate nor the contractor except with the consent in writing of the Owner in any way delay the carrying out of the works by reason of any such matters, question or dispute being referred to Arbitration but shall proceed with the work with all due diligence and shall until the decision of the Arbitrator or Arbitrator's or the umpire as the case may be given abide by the decision of the Owner and no award of the Arbitrator or the arbitrator's or umpire as the case maybe shall relieve the contractor of his obligations to adhere strictly to the Owners instructions with regard to the actual carrying out of the works. The owner and the contractor hereby also agree that Arbitration under this clause shall be a condition precedent to any right of action under the contract.

44. Good for Construction (GFC) or Approved for Construction (AFCO Drawings

Contractor shall indicate the dates on which he requires drawings before starting the work. Contractor shall give a notice of 15 days to Owner/Consultant about the requirement of the drawing/decisions required by him to complete the project as per schedule. It is understood that all the drawings are not required at the beginning of the project for completing the project on time.

Consultant shall forward the drawings to the Contractor. Contractor shall immediately on receipt of 'GOOD FOR CONSTRUCTION' (GFC) drawings, check all specifications (technical specifications and pay item specifications/description) and GFC drawings and

shall promptly (within a maximum time limit of three weeks) notify in writing to the Owner of any such omissions or discrepancies in such specifications or drawings.

Any claim/claims, which may result due to non-compliance of the above, shall not be entertained and work, shall be executed/completed at the cost and consequence of the Contractor.

Contractor shall call for the mission information/drawings from the Consultants in the prescribed form (Request for Information (RFI) only. Contractor shall give a time of 10 days to supply such necessary information required by him. Without specific request from the Contractor, about information required, it will be constructed that all the information is available with the Contractor.

Any delay in giving drawings/decisions/approval of samples shall be recorded by the Contractor and specific extension of time to complete the contract shall be given against such delays to the Contractor for completing the project. At the end of each month Contractor shall inform Owner/Owner about such cumulative delays affecting the schedule and obtain confirmation from time to time, Contractor's claim for extension of time will not be granted.

The Owner/Consultant will grant suitable extension in time if there is delay of supplying the information than specified above.

The decision of the Owner/Consultant on the extension of time is binding on the Contractor and will be outside the purview of arbitration

45. Termination

Owner reserves the right to terminate the contract at intermediate stage and charge the Contractor liquidated damages at the agreed rate in case

- Contractor fails to execute the project as per agreed milestones,
- Owner feels that Contractor will not be able to complete the work as per schedule.
- Persistent default in quality of work not as specified and not acceptable to the Owner/Consultant.

No compensation will be granted for such termination of the contract. Contractor shall prepare his final bill within one month of notice of such termination of work is given to him. Contractor shall not prevent another Contractor from moving on to site after such notice is given. Owner shall settle Contractor's bill within 45 days including time required for certifying the bill. Any additional time in settling the bill will attract interest burden at the rate of 12% per annum on the net amount due to the Contractor, as per certificate of Owner.

46. Rates of extra items

All the extra item rates will be settled by the Owner (before starting the work), whose decision will be final in this regard, by deriving them from similar items already quoted in the tender. In case this is not possible, the extra item rates shall be calculated as per the cost of the materials (including taxes and transport and wastage) plus cost of labour plus 20% of cost of materials and labour to cover his overheads and profits. The Owner's decisions in settling the rates of extra items shall be final and binding on the Contractor.

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The Contractor shall furnish, on request from the Owner all documents required to justify his claim of rates of non-tender items/extra items, which he may be called upon to carry out.

The Owner will approve all extra item rates. No work shall be carried out unless rate of extra item is approved.

All extra items and their cost implications shall be prepared well in advance. These extra items shall only be executed after written approval from Owner.

47. Retention Money

The proportion of payments retained shall be 6% from each R.A. bill subject to a maximum of 5% of final contract price.

48. Units

In units of schedule of quantities, the abbreviations shall mean following:

Cu. M	=	Cubic Metre	R. M. or R. Mt	=	Running Metre
Sq. M	=	Square Metre	MT.	=	Metric Tonne
Q. R.	=	Quote Rate Only			

Annexure 'A'

QUALITY CONTROL TESTS

(Refer Condition No.7 (vi) on Page No.29)

Sr.No.	Material	Test
1	Laterite Stone	i) Compressive Strength. ii) Water Absorption
2	Trap Metal	i) Crushing value. ii) Impact value. iii) Abrasion value. iv) Water Absorption. v) Flakiness Index & Elongation index vi) Gradation
3	Bricks	i) Crushing Strength. ii) Water Absorption.
4	Flooring Tiles	i) Flexural strength ii) Water Absorption
5	Glazed Tiles	i) Water Absorption
6	Cement	i) Compressive Strength ii) Initial setting time. iii) Final setting time. iv) Specific Gravity v) Soundness vi) Fineness vii) Std. Consistency
7	Steel	i) Weight per meter. ii) Ultimate Tensile stress. iii) Yield stress iv) Elongation v) Bend Test.
8	Interlocking concrete paving block	i) Compressive Strength ii) Flexural Test iii) Resistance to wear
9	Wood work (shutters)	i) End immersion tests ii) Knife test iii) Glue adhesion test
10	Cement Concrete	i) Mix design ii) Compressive strength
11	Structural steel	i) Weight/Running metre

Annexure 'B'

Construction Material Testing & its frequency

(Refer Condition No.7 (vi) on Page No.29)

Sr.	Material	Rate	Frequency
1	CEMENT 1) Consistency 2) Initial & Final Setting time 3) Fineness 4) Specific Gravity 5) Soundness 6) Compressive Strength		Test per 50 M.t. above six tests shall be carried.
2	METAL a 1) Sieve Analysis (Gradation) (Concrete work) 2) Sieve Analysis Red Book Specification 3) Sieve Analysis Granular Sub Base (N.H.Work) MOST b Water Absorption c Impact (Concrete WBM/BT) d Crushing e Abrasion f Flakiness & Elongation Index g Plasticity Index for blindage used for WBM		1 Test for every day work 1 Test per 100 m ³ 1 Test per 200 m ³ 1 Test per 200 m ³ 1 Test per 200 m ³ 1 Test per for Each Source 1 Test per for Each Source 1 Test per 200 m ³ 1 Test per 25 m ³
3	SAND 1) Water Absorption & Specific Gravity 2) Fineness Modulus 3) Slit Content 4) Bulkage		1 Test per for Each Source 1 Test per for Each day 1 Test per for Each day work 1 Test per for Each day work
4	BRICKS 1) Water Absorption 2) Comp Strength 3) Effloresce		For each 50000 Nos bricks Above three test are to be carried out
5	Flooring Tiles 1) Flexural Strength 2) Water Absorption 3) Abrasion		For 2000 Nos of Tiles above three tests are to be carried out
6	Glazed Tiles 1) Water Absorption		1 Test- 6 Tiles per 2000 Nos.
7	Concrete Mix Design Compressive strength C.C.Cubes for Qty		1 Concrete Mix Design for each grade of concrete per every per hour

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INTERIOR AND FURNITURE WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY,
PUNE CAMPUS

	Qty. upto 5 m ³ 6-15 m ³ 16-30 m ³ 31-50 m ³ Quantity above 51 m ³		1 Set (3 Nos.) 2 Set (3 Nos) 3 Set (3 Nos) 4 Set (3 Nos) 4+1 additional set per 50 m ³
8	MURUM/ SOIL for earth work 1) Optimum Dry Density 2) C.B.R. 3) Liquid & Plastic Limit/Plasticity Index 4) Filed Density 100% P.D. 5) Filed Moisture Content		2 Test per 3000 m ³ 1 Test per 3000 m ³ 1 Test per 3000 m ³ 1 Test per 3000 m ³ 1 Test per 3000 m ³
9	WOOD 1) Moisture Content 2) Density		1 test per Source 1 test per Source
10	WATER 1) P.H. Value for Water and Sand 2) Chloride & Sulphate content		1 test per Source 2 test per Source
11	Steel 1) Wt per meter 2) Ultimate Tensile Stress 3) Yield stress 4) Elongation		One test for every 5.0 MT or part thereof for each diameter

8. ADDITIONAL SPECIFICATIONS

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

1.1 ADMIXTURES :-

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

1.2 CEMENT IN CONCRETE :

For this purpose the conditions mentioned in additional specifications on **Page 132 to 138** shall be applicable.

1.3 WATER / CEMENT RATIO :

For high quality concrete of low permeability, the water/cement ratio shall be as per IS 456 and mix design, more than 0.45 and preferably 0.40 or less subject to the attainment of adequate workability.

1.4 CURING FOR CONCRETE :

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

1.5 CONCRETE COVER TO REINFORCEMENT :

- (i) The cover concrete must be of the same quality, impermeability and strength as the rest of the concrete. Special mix design should be carried out for the concrete to be used for making concrete cover blocks.
- (ii) The concrete cover must develop sufficient alkalinity, and protect the steel. The alkalinity developed shall not be less than 0.04 N and shall not more than 0.08 N.
- (iii) The cover must be uniform throughout and it's thickness shall be exclusive of plaster or other decorative finishes.
- (iv) The concrete cover shall be as per the relevant clause of IS codes. In the case of poles the cover thickness shall be separately decided by the University Engineer.

1.6 DETAILING OF MISCELLANEOUS ITEM :

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

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

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

2. SPECIFICATION FOR FORMWORK AND STEEL CENTERING :-

1) FORMWORK :-

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

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

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

2) QUALITY OF SHUTTERING :

The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement slurry.

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

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

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

3. TOLERANCE :-

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

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

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

4. SPECIAL PROVISION :-

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

5. REMOVAL OF FORMWORK :-

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

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

6. STEEL CENTERING :-

6.1 Work include :

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

6.2 For R.C.C. works formwork shall be of marine plywood of adequate thickness and grade only. The centering and supporting arrangement such as standard steel trusses/ joists/ spans standards adjustable/ fixed props. H type frames etc shall be designed by the Contractor and approved from the Engineer before commencement of its erection. The Contractor with the prior approval of the Engineer shall use standard steel centering arrangement which may be manufactured by the reputed firm.

6.3 The supporting arrangement designed by the contractor shall conform to the relevant I.S. code and Standard practice adopted in this type of work. The centering arrangement shall be adequately braced and properly secured by using appropriate type of fastenings and fixtures to ensure stability and rigidity of the centering to withstand all loads coming on it. The entire responsibility for design, erection, maintenance and safety etc. will exclusively rest with the contractor. The Engineer reserves right to call detailed design calculations of the entire centering or part there of to verify its stability and also reserve tight to reject entire centering arrangement or part there of and any material used for the centering in the event of which the contractor shall have to arrange for its replacemnet at his own cost.

3. SPECIFICATIONS FOR CONCRETE WORKS :-

(1) DESIGN OF CEMENT CONCRETE MIXES :

(a) All the cement concrete of grade M-15 and higher strength shall be done with proper mix design as per IS : 10262 - 1982 and shall confirm to the durability and other requirements of IS 456 2000. The mix design shall be got approved from the University Engineer from time to time whenever there is change in the source and type of cement and aggregates and change in the gradation of aggregates.

(b) The design of concrete mixes for various concrete items in the work shall be obtained by the contractor at his cost from and approved laboratory. The contractor shall submit in advance details of such design to the Engineer-in-charge for his prior approval.

(c) For concrete of Grade M-25/ M-30/M-35.

Preliminary mix design must be carried out from an approved laboratory, for subsequent changes field mix design shall be acceptable. However incase the University Engineer has got difficulty in acceptance of the field mix design, laboratory mix design shall be got done by the contractor from approved laboratory at his own cost. Cement, fine aggregate and coarse aggregate must be used by weight only according to the requirement of the approved mix design.

- (d) The concrete mix design shall give target strength of 1.33 times the working strength.
- (e) The minimum size of aggregate permissible shall be as per para A-7 of Page - 8 f of standard specification book of 1979 Edition Vol. 1.
- (f) The provision of the specification No. B-7 at page - 38 to 40 of Vol. 1 1979 Edition of standard specification book for controlled concrete shall be applicable for all the structural concrete items. The maximum water cement ratio shall be 0.45. The mix design shall be done accordingly.
- (g) All the expenses of preliminary mix design, subsequent field/ laboratory mix design, work tests, shall be borne by the contractor.

(2) FROMWORK FOR CONCRETE WORK :

The forms of concrete shall be of the materials as directly by the University Engineer-in-charge and shall preferably be of steel or plywood, Forms shall be of the required shape, profile and lines. Suitable devices shall be used to hold corners, adjacent ends, edges of panel or other forms together in accurate alignment. The forms and joints shall tight enough. Forms used for circular curved or structures of unusual shape, petal dome etc. shall be of such a character that will result in smooth concrete surface and exact shape. They shall be prepared such that they will not warp or distort during erection or while placing concrete. Their design and layout shall be got approved from the University Engineer-in-charge in advance.

(3) ERECTION AND REMOVAL OF FORM WORK :

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

(4) MIXTURE OF CONCRETE :

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Design mix concrete as well as nominal mix concrete shall be mixed by following the provision in Standard specification at B. 6.4 unless otherwise directed by the Engineer.

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

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

(5) TRANSPORTATION, PLACING AND COMPACTION OF CONCRETE :

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

(6) CURING :

Curing shall be done by following provision of Section B.6.9 of Standard Specification and as directed by the Engineer.

(7) WORKING IN EXTREME WEATHER :

During windy weather sufficient protection shall be provided to prevent the cement from being blown away during the process of proportioning and mixing. During wet weather, the concrete shall be adequately protected as soon as it is placed in position.

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

(8) FINISHING :

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

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

- (a) The work that has sagged or contains honey combing to an extent detrimental to structural safety or architectural concept shall be rejected.
- (b) Surface defects of a minor nature shall be rectified generally as indicated below by the contractor.

- i) Surface defects which require rectification when forms are removed usually consist of bulges due to movement of forms, ridges at form joints, honeycombed areas, damage resulting from the stripping of forms and bolt hole. Bulges and ridges shall be removed by careful chipping or tooling and the surface is then rubbed with a grinding stone. Honey combed and other areas shall be chipped out, the edges being cut as straight as possible and perpendicular to the surface, or preferably slightly under cut to provide a key at the edge, of the patch. Bolt holes shall be closed by cement mortar to ensure thorough filling.
- ii) Shallow patches shall be treated with a coat of thin grout composed of one part of cement and one part of sand and then filled with mortar similar to that used in concrete. The mortar is placed in layers not more than 10 mm thick and each layer shall be given a scratch finish to secure bond with the succeeding layer. The last layer shall be finished to match the surrounding concrete by floating, rubbing or tooling on formed surfaces by pressing the form material against the patch while the mortar is still plastic.
- iii) Large and deep patches requires filling up with concrete held in place by forms. Such patches shall be reinforced and carefully dowelled to the hardened concrete.
- iv) The same amount of care to cure the material in the patches shall be taken for the whole structure. Curing shall be started, as soon as possible after the patch is finished to prevent early drying. Damp Hessian cloth may be used. But in some locations it may be difficult to hold it in place, a membrane curing compound in these cases will be most convenient.

(9) CONSTRUCTIONS JOINTS :

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

(10) DURABILITY :

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

(11) TESTS AND STANDARD OF ACCEPTANCE :-

11.1 Tests and Standard of acceptance criteria of design mix concrete and nominal mix concrete shall be as follows:

Sampling and testing of Concrete shall be done as per provision of section B.6.12 of Standard Specifications. Acceptance criteria for strength of concrete shall be as per IS 456-2000.

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Case falling outside the above limit shall be examined by the Engineer on Merits in each case.

11.2 DEFECTIVE CONCRETE :

Any concrete which gives substandard results, or is severely damaged due to cracking or shows excessive honey combing and exposure of reinforcement, if exhibits any fault which in the opinion of the Engineer, seriously impairs its function, may be declared as defective concrete. Such non acceptable concrete shall be removed from the site and replaced by fresh concrete of the specified quality by the contractor at his own expenses. Alternatively in case of acceptable concrete, the Contractor shall carry out whatever other remedy the Engineer may reasonably suggest "Small rendering shall be done by the Contractor without extra cost."

(12) KEEPING RECORDS :

The record of mix design, mixing, slump, testing of C.C. cubes etc. shall be maintained in accordance with Section B-6.13 of the Standard Specification.

Sr. No.	Name of Apparatus	Nos (min) required
	Los Angles Abrasion Test apparatus.	1 Set
19.	Flakiness and Elongation Test Gauges	1 Set
20.	Vicat apparatus for testing setting times	1 Set
21.	Slump testing apparatus	4 Sets
22.	Compression and Flexural strength testing machine, 200 tonne capacity with additional dial for flexural testing.	1 No.

9. QUALITY ASSURANCE AND MAINTENANCE

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

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

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**Proposed Interior Work of Jankidevi Bajaj Institute of Management
Studies Building for
Shreemati Nathibai Damodar Thackersey Women's University,
Pune Campus.**

**VOLUME – II
(Technical Specifications)**

TECHNICAL SPECIFICATIONS (FOR INTERIOR WORK)

These specifications are for the work to be executed items to be supplied and materials to be used in the works as shown and defined on the drawings, tender documents and BOQ and described here in all under the supervision and to the satisfaction of the Architect / Employer.

The workmanship is to be the best available and of a high standard. Use must be made of specialist tradesmen in all aspects of the works, and allowance must be made in the rates for doing so.

The materials and items to be provided by the contractor shall be the best of their respective kinds, approved by the architect in accordance with any samples which may be submitted for approval and generally in accordance with the specifications. Where materials or products are specified in these specifications and or / bill of quantities by the name of the manufacture or the brand trade name or catalogue reference the contractor will be required to obtain the approval of the architect / employer before using a material or product other than the specified. The contractor shall produce all invoices, vouchers or receipted accounts for any materials if called upon to do so by the Architect.

Samples of all material are to be submitted to the architect for his approval before the contractor orders or delivers in bulk to the site. Also, the contractor will be required to submit specimen finishers of colours, fabrics etc. for the approval of the architect before according with the works. Should be submitted for the approval of the architect who will retain two copies all at the contractor's expenses.

1. PARTITIONS AND CABINET WORK

General: Partitions, cabinets, etc. shall be fabricated and assembled in the workshop as far as practicable and then brought inside the building ready to set in place. The various members shall be worked in the best manner known to the trade, mortised and tenoned, doweled, blocked and glued together so as to avoid the use of nails as far as possible. The details shall be closely followed, moulding clearly cut and miters accurately made. Free edge of shutters, shelves, partitions, sides etc. shall be provided with first class teak wood edging, glued and nailed in approved manner or as mentioned in detailed specification. Drawer bottoms shall be of 6 mm commercial ply, unless otherwise shown. Drawer front, sides and back shall be of BWR plywood for thickness mentioned in the detailed specification. The drawers shall slide on SLIDING CHANNELS unless otherwise specified. In partitions 12mm thk BWR ply is to be used to cover the frame work.

Preservative treatment: All wood work in contract with masonry shall be painted with approved asphalt or anti termite & fire retardant coating (Viper or equivalent) before placing. Care shall be taken to keep exposed surfaces clear from tar etc. felt shall be used to isolated wood from masonry wherever practicable. All concealed wood etc. shall be treated fully and liberally with so lignum before placing in position.

Painting and Polishing: All exposed teak faces of partitions, glazing, doors, cabinet work etc. shall be Duco painted/ polished to approved finish. Door shutters, internal faces of cupboards and cabinets etc. shall be enamel painted to approved finish. Drawer bottoms, sides of drawers, etc. oiling etc. shall be carried out as specified. All the paints & polishes should be of LOW VOC content as per Green building norms

Protection of work: The contractor shall be responsible for the temporary doors and closing in opening necessary for the protection of the work during progress. He shall also provide and maintain any other temporary

a. TIMBER / WOOD WORK General: Specified variety of timber shall be used in the work. The timber shall be sawn in the direction of grains. The sawing shall be truly straight and square.

- i. Timber generally is to be the best of kind, well and properly seasoned, of matured growth, free from worm holes, large loose or dead knots or other defects and sawn i.e., squarely and will not suffer warping, splitting or other defects through improper handling.
- ii. The hardwood is to be well seasoned Saal, Hollock, Kail, Marandi or other approved similar locally obtainable hardwood weighing 610 Kg/cum.
- iii. Teak wood would be of best quality from Burmah, Dandeli, and Balarshah, free from soft heart, worm holes and weighing 640 Kg /cum.
- iv. The moisture contents in wood shall be as per the CPWD Specification 1977. The testing of wood shall be carried out as per CPWD Specification 1977.
- v. All Steam Beach wood shall be free from worm holes, soft sap or knots. The wood shall be well seasoned as per IS: 287:1973 with a moisture content of 10%.
- vi. No individual hard and sound knot shall exceed 6 Sq.cm. In size and the aggregate area shall be more than 1% of the area of the pieces. These shall not be less than 2 growth rings per cm. width in cross-section.
- vii. All dimensions given in the schedule of quantities and drawings are the required finished sizes.
- viii. Timber shall be well seasoned and kiln dried with a moisture content of 12% nominal plus 2% for teak wood. The contractor should get the timber tested for moisture content of wood at his own cost.
- ix. All timber shall be treated with preservatives and fire retardants.

- x. All timber shall be free from worm holes, loose or dead knots or other defects and shall not suffer from warping, splitting or other defects.
- xi. All wood to be used shall be approved by architect or University Engineer.
- xii. Timber is to be cut to the required sizes and length as soon as practicable after the works are begun and stored under cover so that the air will circulate freely around it. Journey is to be prepared, immediately after the placing of contract, framed up (but not bonded) and stored until required for fixing in position, when it is to be bonded and waged up. Any portions that warp or develop shakes or other defects are to be replaced before wedging up, the whole of the work is to be framed and finished in a proper and workman like manner in accordance with the detailed drawings and fitted with all necessary mottoes straps, belts screws etc. running bonded joints are to be cross tongued with teak on gress and where over 1 - 1/28 thick double tongued. Joiner's work generally unless otherwise specified.
- xiii. Templates boxes and moulds shall be accurately set out and rigidly constructed so as to remain accurate during the time they are in use.
- xiv. Grounds are to be clean shown, free large knots, splayed as required, plugged and fixed to walls etc. at 1'6" centres. Wood plugs are to be cut on the twist, patent wall plugs or plastic filling may be used in lieu of wood plugs with the approval of the Architect.
- xv. All unexposed surfaces of timber e.g. false ceilings, backings fillets backs of doors frames, cupboard framing, grounds etc. are to be treated with two coats of approved timber preservative like solignum, kirticite, term seal or cast oral or vacuum pressure impregnated with and approved water soluble timber preservative before fixing of bedding.
- xvi. JOINTS- All joints will be standard, mortised and tendon, dovetail, do we, cross halved metered tongued and grooved and rebated, nailed or glued but joints, will not be permitted except in exceptional cases, ailed but joints will not be accepted. All joins shall be smeared with white lead.
- xvii. Whenever solid wood is specified it shall be as per I.S.I. and of good quality. The type of wood shall be got approved before collecting the same on site. Fabrication of wooden members shall be started only after approval. It shall be free from large, loose, dead of cluster knot, flows, shakes, wraps, bends or any other defect. It shall be uniform in substance and of straight fibres as far as possible. It shall free from rates, decay, harmful fungi and other dejects of its usefulness for the purpose for which it is required. The colour of wood shall be uniform as far as possible. The scantlings planks etc. shall be seen in straight lines and planes in the direction of grain and of uniform thickness.
- xviii. FIRST CLASS TEAK WOOD: - First class teak wood shall have no individual hard and sound knots, more than 6 sq. cm. In size and the aggregate area of such knots shall not more than 1% area of piece. The timber shall be closed grained.

- xix. SECOND CLASS TEAK WOOD: No individual hard and knots shall be more than 15 sq. cm. in size and aggregate area of such knots shall not exceed 2% of the area of piece.

b. COMMERCIAL PLYWOOD

Plywood to be used shall be grade BWR, i.e., it shall have bounded with BWR (Boiling Water Proof) type synthetic resin adhesive shall be equal or superior quality that is laid down in IS: 303-1960.

The veneers for all grades shall be either rotary cut or sliced. The Veneers shall be sufficiently smooth to permit even spread of glue. The thickness of all veneers shall be uniform, within a tolerance 5%, corresponding veneers on either side of center one shall be of the same thickness and species. The requirement of thickness of the face and core veneers shall be as follows:

- i. In 3 ply board upto 5 mm thick, the combined thickness of the face veneers shall not exceed twice the thickness of the center ply.
- ii. In a multiply boards, the thickness of any veneer shall not more than thrice the thickness of any other veneer.
- iii. The sum of the thickness of the veneers in one direction shall approx. to the sum of the thickness of the veneers at right angles to them and shall not be greater than 1-5 times this sum except for 3-ply as specified in (i).
- iv. The moisture content shall not be more than 12.5% by mass. It shall either be of Mafatlal, Kit ply make or other equivalent approved made. Where B.W.P. Grade is specified it should be boiling water proof confirming to I.S. standards.
- v. Plywood should be used after applying white anti-termite liquid. Nails or screws fixed in the plywood should be equally spaced. The plywood sides wherever they are visible should be covered with the beading patti. Too many joints in furniture pieces will not be considered.
- vi. Rough finished sides while fitting the fixtures like locks, hinges etc will not be considered.
- vii. The contractor will have to make punctures of cut-outs as required by electrical or any other contractor, for which the owner will make no separate payment or by the respective contractor. All contractors will work in team of good spirit and in good faith.
- viii. Certain details shall be modified as per the site adjustments.

c. DOOR SHUTTERS – FLUSH SHUTTERS :

- i. All door shutters shall be 35 mm thick flush door solid core type non-decorative Industrial made conforming to IS – 2202 and ISI certified with block board core (confirming to the requirements as per IS-1659), for which the manufacturer shall produce the necessary evidence. The flush shutters shall be made with internal lipping of hardwood 25 mm thick and both faces commercial ply veneered. Adhesive used shall be phenol formaldehyde synthetic resin conforming to BWP types specified in IS-848-1974.
- ii. Contractor shall obtain the approval for the name of the manufacturer of the flush door shutters from the Engineer-in-charge before placing the supply order. While asking for the approval, copy of the “Bureau of Indian Standard” letter under which manufacturer has been authorized to mark the product with ISI marking should be attached. Engineer-in-charge, before giving the approval shall ensure that the validity date of license has not expired.

Testing of Flush Door Shutters:

On receipt of the shutters at site, the Engineer-in-charge shall be entitled to get the samples of door shutters tested in any approved laboratory. From each lot of shutters, one shutter shall be selected at random by the Engineer-in-charge. The cost of the door shutters selected as samples, their transportation to the laboratory and cost of testing by the laboratory shall be borne by the Contractor and paid by university in running and final bill.

- i. REBATING: The shutters shall be single leaf or doubled leafed as shown in the drawings and as directed by Engineer-in-charge. In case of double leafed shutters, the meeting of the stiles shall be rebated by one third the thickness of the shutter.
- ii. On all door shutters, laminate, 1/1.5 mm th. shall be pasted with adhesives as specified by the manufacturers. The laminate shall be as per approved shade & texture, of make
- iii. The bottom of shutters shall be 5mm above the finished floor level.
- iv. Wherever stainless steel sheeting as a strike plate is mentioned, it shall be pasted with SR 198, along with SS stud screws @ 200 c/c, 50mm inside of all edges. This shall be pasted upto the bottom 1350mm ht. or as shown in the drawing. The SS sheet shall be 0.5 MM th. A sample of a single leaf as well as a double leaf shall be made and got approved from the Engineer-in-charge before ordering mass production. The sample, once approved shall be retained in the approved materials store under the supervision of the Engineer-in-charge.

- v. Vision panel, wherever needed shall be 5/5.5mm. th. plain glass of the size as mentioned in the drawings. The panel shall be fixed within the cut-out made from within the door shutter. The cut edges shall be fixed with TW lipping 35 x 8mm.

The lipping shall be flushed with the outer edges of the door and the glass fixed in the center of this lipping with quarter round beadings, 15x15 mm.

d. LAMINATES

- i. All the laminate to be used shall be of 1/1.5 m thickness in approved the colour and shade as proved and specified by the architect
- ii. Joints in the laminates will not be permitted until and unless the same is unavoidable or is required as per the drawings
- iii. It shall be matt finish manufactured by Greenlam / Formica India Ltd or as mentioned in the list of approved makes. Or its equivalent as per the sample shown by the Consulting unless otherwise specified. It shall satisfy all the I.S.I. standards for melamine coated laminated fibre boards contractor shall have to take approval of the Department for each sheet of the laminates.

e. VENEERS: The best quality natural wood veneers of the specified wood and of the specified thickness shall be used. It shall be in matching group and of uniform shade and as per the selection and approval. The contractor shall have to obtain the approval of the prior to pressing of veneers. The contractor shall have to use the brand of veneers as approved by the Architect.

f. RUBBER: Natural latex rubber (Geo foam or its equivalent) of specified density and the thickness shall be used for all the cushions and padding for upholstered furniture. Loose cushions of all furniture should have solid foam walling to keep up proper shape.

g. FASTENINGS AND HARDWARE: Extent and intent: The intention of the contract is that the building as shown shall be completely equipped with required hardware. Any required item not noted or listed shall be finished in a grade equal to and in harmony with similar item listed.

General: All hardware shall be of the best quality of its type and strictly in conformity with the materials and finish described in schedule of hardware. If called upon to do so, the contractor shall arrange to get hardware specially manufactured to the design, requirements and standards laid down by the Architect.

Samples: Samples of each different item of hardware including screws or any particular item of hardware shall be submitted to the Architect for approval.

Quality: All hardware shall be of perfect fit, uniform in finish and free from imperfections that affect serviceability or mar the appearance.

Guarantee: The contractor shall be responsible for the proper working of all hardware, for a period of one year from the date of completion of acceptance of the building.

- i. The fixtures and fastenings, that is, butt hinges, teemed strap hinges, sliding door stoppers, casement window fasteners, casement stays and ventilators, Handles, Sliding channels catch shall be made of the metal as specified in the item or its specifications.
- ii. They shall be of Stainless Steel, iron, brass, aluminium, chromium plated iron, and chromium plated brass copper oxidized iron copper oxidized brass or anodized aluminium as specified.
- iii. The fixtures shall be heavy type. The fixtures and fastenings shall be smooth finished and shall be such as will ensure ease of operation.
- iv. The samples of fixtures and fastenings shall be got approved as regards quality and shape before providing them in position.
- v. Brass and anodized aluminium fixtures and fastenings shall be bright finished, SS fixtures to be finished as mentioned in the specifications.
- vi. Screws, nails, bolts will be of brass or other non-corrosive metal. In hardware, they will match the finish of the hardware item.
- vii. Nails, in a finished surface shall be neatly punched and the hole filled with wood filler matching the finish. Screws, in a finished surface will be round head, raised head or sunk beneath the surfaces and the hole plugged with a wood plug with matching colour and grain of the wood surface, unless especially detailed.
- viii. HARDWARE: Hinges, locks, latches, door tracks etc. shall be as specified by the manufacture specified. In a variation of this quality of the substitute shall be equal to or better than the original specified, and samples should be submitted to the Architect for prior approval.
- ix. HARDWARE AND METALS: -The hardware throughout shall be of approved manufacture and supply well-made and equal in every respect to the samples to be deposited with the Architect. The contractor any be required to produce and provided samples from many different sources before the Architect is able to make a decision and he should allow in his rates for so doing.

Fittings generally shall have SS brush finish unless otherwise specified, and shall be suitable for their intended purposes.

Screws are to match the finish of the article to be fixed and to be rounded of flat headed or counter sunk as required.

Cover up and protect at the brass and bronze surfaces with thick grease or other suitable protective material, renew as necessary and subsequently clean off and clear away on completion.

Aluminium and stainless steel 304/316 shall be of approved manufacture and suitable for its particular application. Generally the surfaces of aluminium shall have an anodized finish and both shall comply with the sample approved the Architect.

All steel brass, bronze, aluminium and stainless steel articles shall be submitted to a reasonable test for strength; if so required by the Architect at the Contractor's expenses.

All brazing and welds are to be executed in a clean and smooth manner rubbed down and left in the flat test and tidies way, particularly where exposed.

Chromium plated shall be in accordance with B.S. 1224 or as per approved specification and shall be on base materials of copper or brass or as specified by Architect.

SS fittings shall be in accordance with IS ---- and as per specifications The

hardware throughout shall be of approved manufacturer.

- h. Adhesives – Adhesive shall be Phenol Formaldehyde Synthetic resin conforming to B.W.P. (Boiling Water Proof) type specified in IS: 848-1974. Only synthetic resin adhesive shall be used for bonding cores members to one another, including core frame, and for lipping, glazing frame, Venetian frame and other exposed parts where such binding is done.
- i. Nails, spikes, screws and bolts - Nails, spikes and bolts shall be of the best quality mild steel or wrought and of length and weights approved by the Architect. Nails shall comply with IS: 1959-1960 or equivalent approved quality samples. Bolts with I.S. or equivalent approved quality samples. Brass headed nails are to comply with B.S. 1210. Wire staplers shall comply with B.S.1494 or equivalent.
- j. **GLASS** :-All glass shall be of the best quality, free from specks, bubbles, smokes, veins, air holes, blisters and other defects. The kind of glass to be used shall be as mentioned in the item or specification or in the special provisions or as shown in detailed drawings. Thickness of glass panel shall be uniform. All glass to be approved manufacture complying with IS: 3548-196 or as per approved quality and sample.

The compound for glazing to metal is to be special non hardening compound manufacture for the purpose and of 9 brand and quality approved the interior Designer.

In cutting glass, proper allowance shall be made for expansion. Each square of glazing to be in one whole sheet and after cutting the edges to be properly filled.

All cracked, scratched and broken pane should be replaced. All glass surfaces should be properly cleaned inside out.

- k. **MELAMINE FACED PARTICAL BOARD** - It should be three layered wood based particle board, such as Nova pan melamine faced prevaricated on both sides. Particle board should be ISI 3087 FPTH (type II, 1965) marked on edges and should also confirm to German din standard viz DIN 66761. It should impart good bending strength, modules of elasticity, internal bond strength and screw holding strength. Melamine faced surface should has resistant to crack at 100 and should pass cigarette burn test.

l. **HILUX calcium silicate boards for Partition**

- i. The board should be non-combustible to prevent spread of fire when applied on inner walls and ceilings. They should not discharge toxic gas or smoke.
- ii. Fire resistance should be 1 hour with integrity and Insulation as per BS 476 Part 22
- iii. Finally edges of the board are to be jointed and finished so as to have a flush look which includes filling and finishing with compatible filler compound/ Silicon Acrylic based putty and self-adhesive fiber glass mesh and two coats of primer
- iv. **STORAGE** : Boards should be stored indoors placed flat on level supports , stacks should not have more than 100 boards of 6mm. separate stacks with a hard wood board when placing one over the other
- v. **HANDLING** : Boards should be lifted clear off the stack and should not be dragged one over another and should place the boards down carefully in order to avoid damage
- vi. **Appearance** : Boards are to be off-white in color and have a factory grain smooth surface on one face with a lightly textured reverse face.
- vii. **Termite and vermin resistant**: The boards should not affected by insects, vermin, microorganisms

m. CORIAN Acrylic surface for table tops and Partition

- i. Composition: Corian should be solid, non-porous surfacing material homogeneously composed of $\pm 1/3$ acrylic resin (also known as PolyMethylMethAcrylate or PMMA), and $\pm 2/3$ natural minerals.
- ii. Clearances: The recommended expansion clearance with UN-caulked Corian® joints should be minimum $30.5 \times 10^{-6} \times (\text{length of the Corian® piece}) \times (\text{biggest temperature range expected in } ^\circ\text{C})$ in mm. Joints to be caulked should be approximately 3 mm wide to allow satisfactory caulk penetration and expansion.
- iii. Joints : corner joints should be made square (butt) rather than mitred. All Corian® joints should be reinforced. The edges to be joined should be straight, smooth and clean. Joints should only be made with "Joint Adhesive for DuPont Corian®". Make cutouts with a router equipped with a sharp 9.5 mm diameter (minimum) carbide bit.
- iv. Corners of a cut-outs must be rounded to 5 mm radius and edges smoothed, top and bottom, all around a cutout. L- and U- shaped corners need smooth, 13 mm radius inside corners. For hob cutouts corners should be reinforced with a Corian® corner block.
- v. Sealants and Adhesives: FDA-listed silicone sealant sold by DuPont or its distributors should be used to achieve the best performance and color match. Vertical panels of Corian® may be installed over suitable substrates, including water-resistant gypsum board, marinegrade plywood and ceramic tiles. Use "Silicone Sealant" for DuPont Corian® whenever low flame spread is required. In other cases, light colored elastic polyurethane adhesive or Type I (ANSI A 136.1-1967) elastic solvent based spread mastic adhesives may also be used. DO NOT USE WATERBASED ADHESIVES. Install countertops on perimeter framing support (without added substrate) using small amounts of silicone sealant. For making joints in countertops, repairs and custom edges, "Joint Adhesive for DuPontCorian®" is required. When used in accordance with manufacturer's instructions, it provides a smooth.

Rough Carpentry: Materials unless otherwise called for, all framing and other concealed wood members shall be of first class hard wood.

Workmanship: All carpenter's work shall be done by skilled workmen using proper tools. All joints shall as far as possible, be mortised and tenoned and glued with best quality approved waterproof glue. Where mortise tenon joints are not possible, the joints shall be securely nailed with the longest nails that may be used without splitting the wood. Wherever it is necessary or adequate joints cannot be formed by nailing, the members shall be lapped or jointed by GI straps or extra wood blocks. All joints shall be done with neatness and as approved and directed by the Architect.

2. **LABORATORY FURNITURE** – Manufacturing, assembling, transporting and placing /fixing in position knock down factory made modular furniture such as cabinets below lab platform, above lab platform, Loft cupboard, Utility cabinet, Shelves , Storage, Loft

Sign & Seal of Contractor

Corrections

University Engineer

of utility cabinet, Cabinet below washbasin Platform, Mirror cabinet as per drawing, specification and direction of University Engineer. All outer exposed edge of all panels shall be covered and sealed with PVC edge banding tape of required thickness of Rehau or Dollkin or with hot melt, minifix fittings, plastic dowels, modular clips screws washer etc. in approved factory.

- a. **Table Tops** – All table tops to be made up of 17mm +/- 1mm Jet black Granite. The front edge of the granite shall be chamfered at an angle of 28 deg and smoothed. The back splash for the wall bench shall be granite 18/19mm thick material for an height of 4” from the finished table top level
- b. **Carcass** – Under table trolleys/ drawers to be supported on SS tube framework made out of SS 304 in dry labs and SS 316 in wet labs (a material test report (MTR) of the actual material to validate it as being 304 or 316). The same can be tested with molybdenum test kit by Engineer-in-charge on site.
- c. **Shutter and shelves:** Made of 19 mm thick calibrated BWR plywood conforming to IS 303, with Both sides 1mm thick decorative high-pressure lamination sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer conforming to IS : 2046, pressed on a hot-press method with Fevicol-SD ,Henkel (Dorus 4972) adhesives. All the edges must be sealed with 2mm PVC/ABS (Poly Vinyle Chloride /Acrylonitrile Butadiene Styrene) edge bands, glued on Computer controlled automatic edge banding machine with pre-milling operation using hot-melt glue while pre-milling function putting 'on' mode
- d. **Back Panel:** Made of 12 mm thick calibrated BWP plywood conforming to IS 303, with both sides 1mm thick decorative high-pressure lamination sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer conforming to IS : 2046, pressed on a hot-press method with Fevicol-SD ,Henkel (Dorus 4972) adhesives. All the edges must be sealed with 2mm PVC/ABS (Poly Vinyle Chloride /Acrylonitrile Butadiene Styrene) edge bands, glued on Computer controlled automatic edge banding machine with pre-milling operation using hot-melt glue while pre-milling function putting 'on' mode.
- e. **Utility cabinet and loft :** Made of 19 mm thick calibrated BWP plywood conforming to IS 303, with both sides 1mm thick decorative high-pressure lamination sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer conforming to IS : 2046, pressed on a hot-press method with Fevicol-SD ,Henkel (Dorus 4972) adhesives. All the edges must be sealed with 2mm PVC/ABS (Poly Vinyle Chloride /Acrylonitrile Butadiene Styrene) edge bands, glued on Computer controlled automatic edge banding machine with pre-milling operation using hot-melt glue while pre-milling function putting 'on' mode
- f. **Drawers** – Drawers to be made out of 1.2 mm thk perforated steel sheets of SS 316. The material should be conforming to IS 6911:1992. The corrosion resistance of SS sheets could be tested as per IS 10461 (Part 1):1983 and 10461 (Part II) 1985

- g. **Laminates** – compact laminates conforming to standard mentioned above. The labs to have chemical resistant compact laminates / anti-bacterial compact as specified.
- h. **Sink** - Sink supports shall be the hanger type, suspended from top front and top rear horizontal rails of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full length reinforcements welded to the front and rear top rails. Two 3/4" x 1-2/2" x 12 gauge channels shall be hung on the threaded rods to provide an adjustable sink cradle for supporting sinks. When sink capacity exceeds 3,750 cu. in., the sink supports shall be suspended from full-length reinforcements welded to the two end rails. Two 1" x 2" x 10 gauge full-length channels shall be hung from the four 1/4" dia. rods to provide an alternate sink cradle.

The impact resistance should be high which will minimize damage during and after installation. The sinks should be with self-draining base and should be suitable for mounting on top or underside of the work benches. The sinks should be compatible to a vast number of acids, alkalis and reSupervisors. The size of the sink is 560Lx355Dx245H mm (approx.) and Bowl size is 500Lx293Dx245Hmm (approx.). This sinks shall have bottle trap with reducing coupler of size 51x31mm and with 38mm polypropylene pipe of one foot length.

- i. Poly propylene Sinks – Wherever specifically mentioned, The sinks should be injection molded from Poly propylene co-polymer resin. Polypropylene to have very high resistance to attack from a wide range of chemicals and the ability to withstand temperatures up to 100 deg C.
 - ii. Stainless steel sink - Stainless steel A ISI 304(18/8) kitchen sink as per IS 13983 of NIRALI / DIAMOND/ ALLEX make
- i. Hardware – Hardware made out of SS 316 conforming to standards
 - i. Drawer suspension assembly shall consist of 2 sections providing a quiet, smooth operation on ball bearing nylon rollers. All drawers shall be self-closing from a point 125mm open. Cabinet channels shall maintain alignment of drawer and provide an integral drawer stop, but the drawer shall be removable without the use of tools. Drawers shall rise when opened thus avoiding friction with lower drawers and/or doors. Drawer suspension system shall incorporate a double stop, lock open feature.

Drawer and Door Pulls/ Handles : Pull shall be of modern design, offering a comfortable handgrip, and be securely fastened to doors and drawers with screws.

- ii. All pulls shall be of SS 316. Two pulls shall be required on all drawers over 600 long. Use of plastic pulls (molded or extruded), or a design not compatible for usage by the handicapped will not be acceptable.

- iii. Hinges: Hinges shall be made of Type 304/ 316 stainless steel .089 thick, 65mm high, with brushed satin finish. Hinges shall be attached to both door and case with two screws through each leaf. Doors less than 900 mm in height shall be hung on one pair of hinges, and doors over 900 mm high shall be hung on 3 hinges

3. P.O.P. Punning

General: Plaster of Paris punning (Plaster) is generally applied on already cement plastered surface to give it a smooth and even surface.

Preparation of surface: Projecting burrs of mortar formed during existing cement plaster shall be removed. The surface shall be scrubbed clean with wire brushes. In addition the plastered surface shall be pock marked with painted tool, at spacing of not more than 4 cm centers and depth of pocks to be approx. 3 mm deep. This is to ensure a proper key for the plaster. The surface shall be cleaned of all oil and grease marks etc.

Plaster of Paris: The Plaster of Paris shall be of semi-hydrate variety calcium sulphate. It shall not be too quick setting. Initial setting time shall not be less than 17 minutes.

Application: The material will be mixed with water to a workable consistency. Plaster of Paris shall be applied directly on the wall plasters in suitable sizes panels and finished to smooth surfaces by steel trowels. The plaster shall be applied in such a manner that it fully fills the gaps the thickness over the plastered surface is as specified int. the description of the item. The finished surfaces shall be smooth and true to plane, slopes or curves as required.

4. PAINTING

Extent and intent: The contractor shall supply all materials, labour, tools, ladders, scaffolding and other equipment necessary for the completion and protection of all painting work. Painting, as herein specified shall be applied to all surfaces requiring painting throughout the interior and exterior of the building as given in the schedule of finishes or elsewhere. Care is to be taken that all surfaces to be painted are thoroughly cleaned and dry.

Materials: Materials used in the work shall be of manufacture approved by the Architect/Employer. Ready mixed paints, varnishes, enamels, lacquers, stains, paste fillers, distempers and other materials must be delivered to the job site in the original containers, with the seals unbroken and labels intact. Each container shall give the manufacturer's name, type of paint, colour of paint and with unbroken seal and instructions for reducing the thinning shall be done only in accordance with directions. Remove rejected materials immediately from the premises. All brushes tools. Kettles etc. used in carrying out the work shall be clean and free from any foreign matter. All paint material shall be stored in cool, dry conditions clear of other

stores. The mixing of materials of different brands or during application shall not be permitted

Colour: All colours, as provided in the colour schedule shall be approved by the Architect/Employer. The contractor shall mix manufacturer's colours as per Architect's/ Employer's requirements and shall prepare painted samples of the colours selected and submit same for approval by the Architect. No work is to proceed until the Architect has given his approval, preferably in writing of the colour samples. Ready mixed paint shall be used exactly as received from the manufactures and generally according to their instructions and without any admixtures what so ever

Commencement of work: Painting shall not be started until the surfaces to be painted are in a condition fit to receive painting and so certified by the Architect. Painting work shall be taken in hand only after all other contractor's work is completed. Building where painting work is to be commenced shall be thoroughly swept and cleaned up before commencement of painting.

a. All the paints shall meet with the following general requirements

- i. Paint shall not show excessive setting in a freshly opened full can and shall easily be predisposed with a paddle to a smooth homogeneous stage. The paint shall show non curdling levering caking or colour separation and shall be free from lumps and skins.
- ii. Paint as received shall brush easily, possess good levelling properties and show no running or sagging tendencies.
- iii. The paint shall not skin within 49 hours in a three quarters filled closed container.
- iv. The paint shall dry to a smooth uniform finish from the manufactures and generally according to their instructions and without any admixtures what so ever.

b. White Wash / Dry distemper

- i. White wash shall be provided to over plastered surfaces, if any, as directed by Project Manager and Architect.
- ii. Dry distemper of approved shade shall be provided to all internal surfaces of all rooms including toilets and kitchen etc. all as directed by Project Manager and Architect.
- iii. Before application of white wash / distemper the surfaces shall be prepared to clean and even surface.

- iv. White wash shall be prepared from lime slacked on site, mixed and stirred with sufficient water to make a thin cream. This shall be allowed to stand for 24 hours and shall be screened through clean cloth. Four kg. of gum dissolved in hot water shall be added to each cubic meter of the cream (115 gm/cft). Blue shall be added to give required whiteness. The approximate quantity of water to be added in making cream shall be five liters per kg. of lime. 10% Zinc Oxide shall also be added to obtain a desired shining in the white wash.
- v. Dry distemper shall be carried out in two or more coats over one coat of approved primer as per manufacturer"s instructions to give even shades.
- vi. White wash and dry distemper shall be applied in specified coats by using flat brushes or spray pumps. Each coat shall be allowed to dry before next coat is applied, if additional coats than what have been specified are necessary to obtain uniform and smooth finish it shall be given to no extra cost.
- vii. The finished dry surface shall not show any signs of cracking and peeling nor shall it come off readily on the hand when rubbed.
- viii. All paints have to be low VOC paints and certificates of the same should be provided by the bidder.

c. CEMENT BASE PAINT

- i. Two or more coats of cement base paint shall be applied to give even shade on all external cement plaster, internal plaster surfaces or parapet surfaces. Soffits of chajja, lintels, beams and cills of external windows. The shades of paint shall be used as approved by the Engineer-in-charge. Each coat shall be cured well by wetting surfaces for at least three days.
- ii. Alternatively, white cement slurry shall be used with pigment as required to achieve the desired shade. The white cement slurry shall be such as to provide a spread of 15 Sq.M per bag (50Kg) of white cement.
- iii. For all external paints, a patch at least 10 Sq.M. in area has to be done and got approved form the Engineer-in-charge for quality, shade & texture.

d. ACRYLIC EMULSION PAINT

- i. These paints are to be used on internal surfaces except wooden and steel. Plastic emulsion paint as per IS : 5411 of approved brand and manufacture and of the required shade shall be used.
- e. PLASTIC EMULSION PAINT: Pigmented priming cost (emulsion thinned with water) followed by three or more finishing coats of plastic emulsion paint. Pasted filter to be applied every coat exempting the final finishing coat and sanded.

f. Painting on New Surface

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- i. The surface shall be thoroughly cleaned and dusted off. All rust, dirt, scales, smoke splashes, mortar droppings and grease shall be thoroughly removed before painting is started. The prepared surface shall have received the approval of the Engineer-in-charge after inspection, before painting is commenced.
- ii. Application: The number of coats shall be as stipulated in the item. The paint will be applied in the usual manner with brush, spray or roller. The paint dries by evaporation of the water content and as soon as the water has evaporated the film gets hard and the next coat can be applied. The time of drying varies from one hour on absorbent surfaces to 2 to 3 hours on non-absorbent surfaces.
- iii. The thinning of emulsion is to be done with water and not with turpentine. Thinning with water will be particularly required for the under coat which is applied on the absorbent surface. The quantity of water to be added shall be as per manufacturer's instructions. The surface on finishing shall present a flat velvety smooth finish. If necessary more coats will be applied till the surface presents a uniform appearance.
- iv. Precautions:
 1. Old brushes if they are to be used with emulsion paints should be completely dried of turpentine or oil paints by washing in warm soap water. Brushes should be quickly washed in water immediately after use and kept immersed in water during break periods to prevent the paint from hardening on the brush.
 2. In the preparation of wall for plastic emulsion paintings, no oil base putties shall be used in filling cracks, holes etc.
 3. Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening.
 4. Washing of surfaces treated with emulsion paints shall not be done within 3 to 4 weeks of application.

NOTE

The specifications of the various items of the works will be as per latest editions of PWD/CPWD specifications for work with all correction slips. In absence of any detailed specifications in PWD/CPWD, latest Indian Standard specifications and code of practice shall become applicable.

Wherever, these codes are silent, the same shall be governed by sound engineering practice and the decision of EIC in matters of interpretations etc. shall be final and binding on the Contractor. In case of the material supplied by the specialized agencies the material specifications of the same agencies shall be made

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available with their address and telephone No. by the contractor and shall be used as per the same specification and as per the direction of EIC. If required the contractor shall arranged the inspection/ verification of the items from the Engineer of the expert agency. Item wise detailed technical specifications may be described in the tender to correlate with drawings and BOQ

5. **Polishing works** -The wooden article to be polished shall be first prepared to smooth surface with 400 fit black water proof sand paper. All dents shall be filled with epoxy putty and to be finally finished with DUCO, N. C. clear lacquer to a silky smooth finish.

The basic material shall be shellac dissolved in methylated spirit. The timber must be well sanded and cleaned and the grain, filled with grain filler. Any staining must be done before applying the polish. Work evenly over the surface with slow figure of eight motion until the timber is coated with a thin layer of polish. The object is to apply a series of thin coats allowing only few minutes for drying between the two coats. When a level and even bodied surface is obtained the work is ready for spiriting off. Allow the work to stand for at least eight hours, then take a fresh rubber with a double thickness of cover material and charge it with methylated spirit. The object of spiriting off into is to remove the rubber marks and to give the brilliance of finish. Any polish or paint spot marks etc. on flooring tiles should be cleared by the contractor before handling over the site

a. Spirit polish

- i. Polish: Polishing material shall be prepared by dissolving pure shellac, varying in shade from pale orange to lemon yellow, free from direct and other materials, in methylated spirit at the rate of 0.15 Kg. shellac to 1 litter of spirit. Suitable pigment to achieve the required shade of polish shall be added as directed by the Architect.
- ii. Preparation of Surface: The surface, cleaned of all dirt etc. shall be rubbed down smooth with sand paper and well dusted. Knots if visible shall be covered with a preparation of red lead and glue size laid on while hot. Holes and indentations shall 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 to one litter of spirit. The surface shall again be rubbed down perfectly smooth with fine sand paper and wiped clean.
- iii. Application: Three or more coats of polish shall be applied over the above surface, to achieve a finish as approved by the Architect. The polish shall be applied with a pad of woolen cloth covered by a fine cloth. The pad moistened with polish shall be rubbed had on the wood surface in a series of overlapping movements, applying the material uniformly over the entire area to give an even finish. Subsequent coats shall be applied in similar manner after the previous coat is allowed to dry. The finishing shall be done with fresh piece of clean fine cloth, damped with methylated spirit and applied by light rubbing. The finished surface shall have a uniform texture and high gloss.

b. Wax Polishing

- i. Preparation of Surface: The surface to be polished shall have been finished smooth. Knots, cracks and holes on the surface shall be cleaned and filled with wood putty (fine saw dust mixed with bees wax). The fillings when dry shall be rubbed down with a carpenters file and then the entire surface shall be rubbed down perfectly smooth and wiped clean. In no case shall sand papers be rubbed across the grains so that even fine marks are not seen on the surface.
- ii. Application: The polish shall be applied evenly with a clean soft pad of cotton cloth in surface is completely and fully covered. The surface is then continuously rubbed till the surface is quite dry. A second and third coat shall be applied in the same manner and rubbed continuously until the surface is dry. The final coat shall then be applied and rubbed until the surface has assumed a uniform gloss and is dry, showing no sign of stickiness. The finished surface shall have a uniform flossy finish as approved by the Architect.

MELAMINE FINISH

The Melamine finish shall be applied on the French spirit polished surface.

The melamine coat preferable of clearly hard glaze shall be applied with a cloth Pad. The surface shall then be left to dry for at least six hours and further coats are applied with a paint brush. If the duration of gap is more than 24 hours between coats, the previous coat shall be rubbed down with a fine glass paper or a medium grade of steel wool. The matt finish shall be obtained by giving a final coat of clean reseal matt coat.

1. FALSE CEILING

POP False Ceiling

The thickness of POP ceiling shall be 10mm & will include all the curves, coves, etc as per architectural design. The frame work shall be treated with one coat of primer of zinc coating of grade 350 as per IS 277 and shall be true to planers or slopes as specified.

The joints in the expanded metal shall be provided only under the main steel frame work. The plaster of Paris shall be of calcium sulphate semi-hydrate variety, its fineness shall be such that when sieved through a sieve of IS sieve designations 0.05mm for 5 min after drying the residue left on it shall not be more than 1% by weight. It shall not be too quick setting. Initial setting time shall not be less than 13 min. The average compressive strength of material determined by testing 5 cm cubes after removal from mould. After 24 hours and drying in an oven at 40 c till weight of the cubes is constant, Shall not be less than 84 Kg/sq.m.

The material will be mixed with water to a workable consistency; plaster of Paris shall be applied to the underside of expanded metal in suitably sized panels and finished to a smooth surface by steel trowels. The finished surface shall be smooth and true to planed slopes or curved as required.

Mineral fiber Ceiling –The Mineral fiber ceiling should be a recessed visible grid and a tegular edge design, creating a ceiling with a shadow effect that accentuates each tile and partially conceals the grid system. The visible surface of each tile should be 7mm below the grid.

ACCESSIBILITY: The tiles should be easily demountable. Minimum demounting depth according to installation diagram.

Light Efficiency: White 010, nearest NCS color sample S 0502- Y, 84% light reflectance (of which more than 99% is diffuse reflection)

2. The system should be consists of connect grid system , with an approximate weight of 2.5 kg/m² , manufactured room high density glass wool, The visible surface should be coating and the back of the tile is covered with glass tissue. The edges are painted.

Measurements: Length and breadth of the plan area of the finished work shall be measured correct to a centimeter. No deduction shall be made for openings provided nor shall extra payment be made either for any extra material or labour involved in such openings. Rate shall include provision of access panel with MDF panel, rate to include decorative work with such or raised levels in false ceiling. Rate shall include all scaffolding staging etc.

3. Aluminum / GI perforated Metal Ceiling system

The metallic ceiling shall have regular beveled/plain edge powder Coated aluminum / GI ceiling tiles In size 600mm x 600 mm x 0.6 mm & color RAL 9003 white & having perforation of 1.8 dia circle with a backing of factory pressed black non woven tissue the epoxy powder coat should electro statically be applied in a controlled environment and then be baked to achieve the perfect fusion with the metal surface to be laid on to be exposed grid system 24mm comprising main runner, cross tees and wall angles. for installation to comprise intermediate channel of size 45mm x 0.55mm thk with two flanges of 15mm each suspended at 1200 mm clipped to spring runner, bracket and connectors for spring runners securely fixed to structure using GI soffit cleats fixed to ceiling with 6mm dia and 50mm long dash fasteners, 4mm GI adjustable rods with galvanized level clips spaced at 1200mm center along with the runner by approved suspension and bracket and connectors for spring runners. Wall angles 19mm X 22mm with clips to be secured to the wall at 450mm maximum center to the successful completion of the job to the satisfaction of the Engineer-in-charge. The rate shall be inclusive of making openings for light fittings, grills, diffusers, cutouts, wastage and necessary hardware etc

Demountable Aluminum Ceiling The ceiling should be laid in true horizontal level with Concave and Convex demountable ceiling panels made of aluminum of nominal size 600mmx900mmx1.0mm (actual size: 607x911x1.0mm) having a perforated (micro perforation with 2.5mm dia holes and 22% open space and 12.8mm border) surface and having Fire Performance CLASS A (ASTM E 84) and an NRC of 0.7 suitable for Green Building application, with Recycled content of 50%. The tile shall have colour as per

approval and acoustical fleece glued to the back of the tiled shall be laid on hook-on grid systems with hook-on (J-bar) carriers and Alignment (spacer) bars suspended from the structural soffit using a system of threaded rods. The rate shall be inclusive of making openings for light fittings, grills, diffusers, cutouts, wastage and necessary hardware etc all complete as per Engineer-In-charge at site.

Alignment bars will be spaced at every 1200 mm intervals secured to the structural soffit using 6mm (M6) threaded rods in a direction parallel to the length of the curved panels. The hook on carrier bars shall be secured perpendicular to the alignment bars using rivets or nuts at every 911mm intervals. The concave and convex curved panels shall be placed alternatively on the hook-on bars and secured by the special tabs provided on the hook-on carriers. Special perimeter trim (optional) may be fabricated to conceal the carrier bars in the shorter direction of the panel. The rate shall be inclusive of making openings for light fittings, grills, diffusers, cutouts, wastage and necessary hardware etc.

4 SS metal ceiling

The ceiling should be perforated & laid Clip-in & will consist of 600x600 mm clip in tiles of stainless steel in 0.35 mm thickness with bevel edge in metallic finish with Light Reflectance > 60% and suitable for Green Building application, with Recycled content of 25%.

Installation: To comprise 3000mm long „C“ channels spaced at 1200mm centers securely fixed to the structural soffit by support clamp & approved hangers. The last hanger at the end of each C channel should not be greater than 600mm from the adjacent wall. Use a C-channel connector for splicing two pieces of C-channels. 4000mm Dp-12 Main carriers (spring tee bars) shall be spaced at 600mm centres in a direction perpendicular to the C channels and shall be secured at every intersection with C channel using a dp-12 hanger. Tiles should be clipped in between two Dp-12 carriers (spring tee bars) from below. Perimeter trims to be of wall angles of white colour secured to walls at 450mm maximum centers. Cut tiles to be secured to the wall angles using a spring clamp. All complete as per Arch Drawing. Rates inclusive of necessary cutouts

5 Calcium silicate board false ceiling

The thickness of the false ceiling should be 12.5mm thick conforming to IS: 2095 including providing and fixing of frame work made of special sections power pressed from MS sheet and galvanized in accordance with zinc coating of grade 350 as per IS: 277 and consisting of angle cleat of size 25 mm wide x 1.6 mm thick with flanges of 22 mm and 37 mm at 1200 mm centre to centre one flange fixed to the ceiling with dash fastener 12.5 mm dia x 40 mm long with 6 mm dia bolts to the angle hangers of 25 x 25 x0.55 mm of required length, and other end of angle hanger being fixed with nut and bolts to GI channels 45 x15 x 0.9 mm running at the rate of 1200 mm centre to centre and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed The joints between the Calcium silicate board are finished flush and even with jointing compound and tape. Coat of primer suitable for Calcium silicate board after putty including double scaffolding. All complete as directed.

List of Approved Make for Interior Work:-

No	Location / Proto type	Material	Type	Makes
1.	Wooden Furniture	Plywood of varying thicknesses (i) Carcass, shutter and shelves: 19 mm thick (ii) Back Panel: 12 mm thick (iii) Top panel : 35 mm thick	BWR plywood conforming to IS 303,	Green, Century, Duco, Kitply
2.	Surface finish - laminate	Exposed side	1mm thick decorative high- pressure lamination sheet of with high density protective surface layer conforming to IS :2046	Greenlam, Royal touch, Merino
3.	Surface finish - laminate	Exposed side – in chemical labs	Acid resistant laminates	Greenlam Lab guardian 9801, 9802
4.	Surface finish - veneer	Exposed side	plywood 4 mm thick, one side decorative veneer conforming to IS: 1328	Ekbote veneers, Duro, Green
5.	Surface finish - glass	Counter Top - 12 mm thick	clear float glass in table top including crystal polishing of edges to required shape	Modifloat, Saint gobain
6.	Glass film	White board film	Glossy white polyester film with whiteboard capabilities	3M – WH-111
7.	Internal finish - Laminate	other side	White 0.8mm thick balancing lamination conforming to IS : 2046, pressed on a hot-press method	Greenlam, Royal touch, Marino
8.	Adhesives			Fevicol-SD SH/ Marine Henkel (Dorus4972)
9.	Edge Finish for veneered furniture	6 mm thk Burma teak lipping, Teak wood for		Rehau/ Sidmark
10.	Hardware	Handles – 250/300 mm	SS	Kich/ Hafele / Hettich / Ozone/ Yale
11.	Hardware	Handle –100 mm/	SS	Kich CH /Tunes A10/

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INTERIOR AND FURNITURE WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY,
PUNE CAMPUS

No	Location / Proto type	Material	Type	Makes
	Furniture	64 mm		Hafele / Hettich
13.	Cabinet knobs	Cabinet knobs 25/50 mm	SS 304/316	Kich N56 S / Hafele / Hettich
14.	Drawer sliders	Drawer sliders – work cabinets - Metabox	SS	Ebco / Hafele / Hettich
15.	Telescopic sliding channels	Telescopic sliding channels for drawers	SS 304/316	Kich / Hafele / Hettich/ CNR/ BOSCH
16.	Spring Hinges	Spring Hinges for cabinets	SS 304/316	Ebco/ Hafele / Hettich
17.	Floor mounted spring hinges	Floor mounted spring hinges	SS 304/316	Ozone/ Hafele/ Hettich/ Enox
18.	Patch fittings	Patch fittings for frameless glass shutters	SS 304/316	Hafele/ Hettich Ozone/ Enox
19.	Patch locks	Patch locks for frameless glass shutters	SS	Hafele/ Hettich/ Ebco/ Europa
20.	Drawer Locks	Drawer locks	SS	Godrej /HafeleInox/Ebco/ Europa/ Hettich
21.	Cabinet Lock	Cabinet Lock	SS 304/316	Hafele / Godrej/Ebco /Europa/ Hettich
22.	Door Lock	Door Lock	SS 304/316	Hafele / Godrej/ Europa/ Doorset
23.	D brack for Glass Shelves	D brack for glass shelves	SS 304/316	Hafele/ Hettich
24.	SS Perforated sheets	SS perforated sheets – 1.2 mm – 316 grade	SS 304/316	
25.	Window Shades – work areas,	Blinds roller blinds	Roller Blind - 38mm OD roll formed lock seamed steel of 0.5mm thickness	

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INTERIOR AND FURNITURE WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY,
PUNE CAMPUS

No	Location / Proto type	Material	Type	Makes
26.	Gypsum Board			Gyp India
27.	Modular Ceiling			Armstrong
28.	PVC carpet 1.50 mm thk 3.00 mm thk			Vista, Carara,
29.	MS frame			Tata sections
30.	Mirror 6mm thk			Modi

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GENERAL ELECTRICAL CODE & SPECIFICATIONS FOR ELECTRICAL WORKS

INDEX

TS	1.0	SCOPE
	1.1	CODES, STANDARDS AND LAWS
	1.2	PROJECT DATA – ELECTRICAL
	1.3	APPROVED MATERIALS AND DRAWINGS
	1.4	TECHNICAL SPECIFICATION.

TS 1.0 SCOPE

The specifications provided for the manufacture, assembly, testing at manufacture's works before dispatch, supply at site, erection testing and commissioning of switchgears, switchboard panels, cables, distribution boards, wiring for equipment's and lighting fixtures, fans etc. as detailed in the scheduled of quantities detail specifications and drawing as per relevant standards specified in the tender.

TS 1.1 CODES, STANDARDS AND LAWS

10 Except as noted in these specifications, equipment's erected shall be tested in accordance with latest codes of practices and standards of I.S.I. where the standards are conflicting with the stipulation of these specifications then this specification supersedes them.

12 The Electrical installation shall generally be carried out in conformity with the requirements of the Indian Electricity Act 1910 as amended up to date and Indian Electricity Rules 1956 framed there under and also the relevant regulations of the Electric Supply Authorities concerned. As required under these rules, the Electrical work shall be executed only by the Licentiate Electrical Contractor whose name, address, license number and other credentials as required will be submitted in writing prior to the commencement of the works.

13 All equipment's and materials being supplied by the Contractor shall be of the make as specified and indicated in the list of approved materials. These shall confirm with the regulations of Insurance Tarff Advisory Committee.

I Some of the important Indian Standards applicable to these specifications are listed here under for the information of the Tenderer.

- I.S. 2516 - Part I & Part II/Section I) – 415 Volts Air Break Circuit Breaker
- I.S. 3427 - Metal enclosed switchgear and control gear
- I.S. 8828 - 1978 – Moulded Circuit Breakers
- I.S. 2834 - I.T. Capacitors
- I.S. 2208 - HRC Cartridge fuse units up to 650 Volts
- I.S. 2705 - Current Transformers
- I.S. 2509 - Rigid PVC Conduit
- I.S. 3419 - PVC fittings for non metallic conduit
- I.S. 1653 - Rigid Steel Conduit for Electric Wiring
- I.S. 1554 - PVC insulated cables and cords for power and lighting
- I.S. 732 - Electrical Wiring Installation
- I.S. 2667 - Fittings for rigid steel conduits for Electrical wiring
- I.S. 3043 - Code of practice for earthing
- I.S. 2309 - Code of practice for Lightning protection
- I.S. 5133 - Electrical boxes recessed type for switches and socket outlets
- I.S. 1258 - Bayonet lamp holders
- I.S. 2412 - Link clips for Electrical wiring
- I.S. 4615 - Switch socket outlet
- I.S. 1293 - Three Pin Plugs and Socket Outlets
- I.S. 371 - Ceiling Roses
- I.S. 374 - Fans and Regulators ceiling type electric
- I.S. 1567 - DP & TP Switches upto 100 Amps
- I.S. 3854 - Switches for domestic and similar purposes
- I.S. 2268 - Electrical Call Bells and Buzzers
- I.S. 2713 - Steel tubular swaged poles

TS 1.2 PROJECT DATA ELECTRICAL.

1. Incoming supply
11 KV, 3 Phase, 3 wire, 50 Hz, 11 KVA supply from MSEDCL at sub station and from there LT supply near Bio-Tech. depart.
2. Power Distribution and Utilization 415 Volts, 3 Phase, 4 wires, 50 Hz earthed.
3. Lighting and Heating 240 Volts, 1 Phase 2 wire 50 Hz supply

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4. The above supply voltage may vary as per standard variation allowed for voltage and frequency

TS 1.3 APPROVED MATERIALS AND DRAWINGS

1. Preferred makes of material and tender drawings are listed separately. These shall form part of the specification.
2. Drawings attached are for general guidance of the Tenderer. The contractor shall submit detailed working drawings that will include minor variations made during the execution of works.
3. Space allocated for major Electrical equipment shall taken into considerations before finalizing the equipment as required where space does not meet the requirement including the adequacy of the clearances as stipulated the contractor shall discuss the same with the University Engineer and finalize the requirement

TECHNICAL SPECIFICATION.

SECTION -I

- | | |
|-------------|---|
| T.S.1.4.1 | Erection of switchgear panels. |
| T.S 1.4.2 | Installation of Distribution Boards & Panels. |
| T.S.1.4.3 | Installation of Switch Fuse units and M C B: D B S. |
| T.S.1.4.4 | Installation of Cables and Terminations. |
| T.S.1.4.5 | Installation of Conduit. |
| T.S. 1.4.6 | Wiring. |
| T. S. 1.4.7 | Earthing System |
| T. S. 1.4.8 | Fixing of Fluorescent Fittings. |
| T.S. 1.4.9 | Fixing of Electric Ceiling Fan. |
| T.S. 1.4.10 | Wall and Bracket Fan |
| T.S. 1.4.11 | Fixing of Exhaust Fan |
| T.S. 1.4.12 | To Install Indicating Instrument/Light |

T.S.1.4.1 Erection of switchgear panels.

- II. Equipment shall be installed in a neat, workmanlike manner so that it is level Plumb Square and properly aligned and oriented manufacturer's instructions drawing and guidance shall be strictly followed.
- JJ. Contractor shall be responsible for any damage to the equipment in consequent to not following manufacturer's instructions correctly.
- KK. The contractor should submit in advance requisite drawings for foundations and the trenches required inside the building to facilitate planning by the other traders provision of base channels supporting frame for embedding in the foundation shall be made by the contractor he should also check it 's correctness after these are constructed the foundations and trenches shall provide adequate clearance.
- LL. The contractor shall take precaution in handling delicate mechanisms.
- MM. Power and control wiring of the switchgear shall be done as per the schematic drawings and required tests shall be carried out to ensure proper operation and function of switchgears.
- (f) The Ammeters, Voltmeters, Wattmeter's, Current Transformers, Selector Switches and indicating light shall be as per respective specifications. The moving iron ammeter and voltmeter shall conform to I S 1248 the CTs shall be suitable for 35 MVA short circuits. The shape size and range of the meter shall be prescribed. The meter shall be generally flush type Neon indicating light shall be suitable to work on 250 Volts, 50 HZ A C supply the bulb shall flush type of Red, Yellow and Blue colours and with low burden.

T.S 1.4.2 Installation of Distribution Boards & Panels.

- III. The Distribution boards shall be installed in a manner similar to the switchgear panels.
- 3. Panels for lighting and power shall be installed either recessed in or surface mounted on wall as per instructions these shall be erect and plumb the topside of the panel shall be 1850mm above floor level unless otherwise instructed.

These panels shall be on M S frame fabricated from structural steel and the same adequately fixed in wall as mentioned in those specifications.

T.S.1.4.3 Installation of Switch Fuse units and M C B: D B S.

Switch fuse units and isolators shall be installed on metal frame fabricated from structural steel. The frame shall be mounted on wall/column with proper type and size of nut bolts. Where switches and isolators are to be flush with wall. These shall

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be mounted in a recessed block with a hinged door of approved type the hinged door shall have a lever arrangement so as to open only required with a special type key supplied with the box.

T.S.1.4.4 Installation of Cables and Terminations.

8. All cable routes shall be finalized and approved prior to digging of cable trenches.
9. Cables shall be laid and installed as per respective IS.
10. The cables shall be laid underground by taking a trench not less than 750mm deep, the trench shall be provided soft earth cushioning. After laying cable shall be covered by soft earth and provided protection by covering the RCC tile/brick for HV/LV cables respectively. The trench shall be back filled to match the surroundings.
11. Where cables cross concrete pathways over vehicular passage of RCC or E.W.P. pipe shall be used to lay the cable.
12. Cable shall be laid in one length without joint.
13. Manufacturers recommendations and IS codes shall be followed for bends and turns to avoid kinks and sharp bends in the cables while lying.
14. Concrete cable markers shall be provided on cable routes. These shall be at locations where cables make a turn or at a distance minimum 15 to maximum 20 meters. The markers shall have approved inscription like "Cable HV/LV" or "Cable LV".
15. Cables laid above ground and run on wall / ceiling shall be adequately supported on spacers and neatly clamped in an approved manner. MS angle spacers shall be 6mm thick, fixed with No.10 nettle fold wood screws 50mm long and MS galvanized saddles not more than 450mm apart shall be provided to a cable when it passed through floor slab.
16. Cable support shall be given two coats of red oxide primer and final coat of enamel paint of a provided shade.
17. Every cable shall be provided with an approved identifying tag of non-corrosive material at either end and at crossing for easy identification. The identification number/code shall also appear on cable layout drawing and single line diagram.
18. Termination shall be done with single compression Siemens type brass cable glands. At switchgear/transformer where larger cable sizes are involved flange type glands shall be used. Wiping glands shall be used where cables have lead sheath. Lead sheath and armour at both ends shall be bonded to earth.
19. Core termination shall be done by using tinned copper lugs/socket fixed to the core by crimping or soldering as per instructions.
20. Special care shall be taken for termination of HT cables. Jointing kits and proper materials shall be employed for HT terminations that will be done by experienced jointer. These joints shall be tested as per procedure.
21. The sequence of R Y B for terminal connection shall be followed at every termination.

T.S.1.4.5 Installation of Conduit.

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22. Conduit and accessories shall be as specified and installed as per relevant I.S. code. Junction boxes shall be provided as necessary and of the type and size to serve the intended purpose. Inspection type accessories are essential for pulling, testing and maintenance at future date.
23. Minimum size of conduit to be 20mm diameter, 16 SWG. Threads shall be cut square and at least for a length of 25mm. Ends shall be cleaned to remove burrs prior to installation.
24. Fittings and accessories shall be of one make throughout for easy interchange ability and neat appearance.
25. Conduit shall be joined by standard sized screwed sockets/couples. Connections shall be tight with full thread engagement. Running threads at joints shall be provided as necessary to facilitate easy removal when required. Such joints shall be tightening by using check nuts.
26. Conduits shall be installed concealed in wall or above false ceiling. These may run along wall floors and ceilings or on steel supports in accordance with the schedule of work and relevant layout drawing. Exposed conduits shall be neatly run and evenly spaced. Crossing, bending and cutting not be only a minimum but also without interference with other installations. Conduit may be run on cable trays like cables and shall be clamped properly.
27. Standard type and size good quality fasteners, spacers, saddles, clamps shall be employed and installation, clamping spacer placement shall be in accordance with I.S. code of practice. The spacers and clamps shall be MS hot dip galvanized. Thickness of spacers shall be 3mm while clamps shall be of 2mm thickness. Fixing hardware shall be round head, rust proof, galvanized material. Painting requirement specified in the specification shall be followed for saddles, clamps support etc. Exposed conduits shall also be painted with approved shade of paint.
28. PVC conduits shall be used for the low voltage system. PVC conduits shall be installed in the similar manner. Accessories/fitting shall be of similar material. These shall be joined as per manufacturer's recommendations. Inspection type boxes/fittings shall be provided at strategic locations for ease in pulling / inserting wires / cables without damage.

T.S. 1.4.6 Wiring.

Generally for circuit and point wiring PVC insulated, stranded wires conforming to I.S. and specified in the approved material sheet. Lighting System.

- (a) Lighting load shall be divided equally on all the three phases as for as practicable.
- (b) Loop system shall be adopted for lighting wiring, joints in wire shall not be allowed. Joints, where unavoidable shall be made through approved mechanical connectors with the approval of the University Engineer.
- (c) All materials and accessories shall be of good quality fresh stock and of approved make.
- (d) Wiring shall be colour coded for easy identification and checking not only during installation and testing but also for maintenance. Colour code shall be indicated prior to installation.

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- (e) Minimum size of conductor for light system shall be 3.029 copper conductor PVC to PVC insulated and of 660 Volts grade.
1. Each circuit will be controlled by M.C.B. / Fuse in the lighting panel. All circuits and points shall be suitably numbered for identification, which will have to be approved.
 2. Each outlet, light / fan / socket shall have a individual separate 5 A S.P. control switch unless otherwise group control shall be placed on the phase wire.
 3. Only one twin flexible cord of copper conductor minimum size 23/0076 shall be attached to a ceiling rose.
 4. Unless otherwise indicated or instructed the mounting height shall be as

follows:

Switchboard for local control	1350 mm
Switches in lobby passage	1500 mm
Ceiling Fan provided minimum	300 mm rod
	1200 mm
Wall bracket	2100 mm

- (a) The point wiring shall include circuit wire of required from lighting switchboard to the local switch control, to the socket outlet, point for light, fan, and bell. Using PVC insulated copper conductor of 660 Volts grade approved make wires. Minimum size of conductor for light circuit wiring shall 3/036 copper conductor PVC insulated.

Writing accessories like S. P. switch for control. Piano/Tumbler type, ceiling rose/angle holder/straight holder, bell push, indicator (for bell points only)

Switch board/box of required size

Earth wire wherever needed

- (c) The switchboards size shall be such that a clear distance of 10mm all round and also between switches, plugs, regulators etc. to be installed on the board is maintained. The board shall be secured to the wall by 40mm long No 10 wood screws of approved make. The folded type switchboard to be provided with full length brass hinges.
- (d) Round block on the slab shall be installed by No. 10 screws of sufficient length such that at least 50mm length is screwed in the slab. The length and size of the screw shall be suitable for hanging the fixture from the round blocks. All switches, sockets, ceiling roses shall be fixed by No. 8 screw of suitable length.

- (ii) For batten wiring best quality seasoned teak wood batten of not less than 19mm wide and 15mm thick shall be used. The batten shall be planned smooth, free from knots and given coats of varnish before installation. Tinned brass clips of 34 S. W. G. and 6mm wide and sufficient length shall be nailed to batten with a gap of not more than 10cm between clips on the run of wires on batten, the length of clips shall be such that one more wires of same size can be clipped later, the free end of the clip after carrying out through the eyelet of clip shall be buckled back only once and double folding shall be permitted.

Power Wiring

- Light and power wiring shall be distinctly separate. Respective panels shall be designated as LP - Lighting panel and PP- Power Panel. These shall be distinctly marked and so indicated on drawings.
- Minimum size of conductor for power circuit shall be 2.5 Sq mm copper conductor. PVC insulated 660 Volts grade.
- Single phase sockets above 5 Amps rating and Small size motors shall be connected to the circuits of Power panel.
- All sockets shall be of 3 Pin type. Earthing shall be done as specified.
- A separate circuit shall be provided for room having Air conditioner and Motor Load.
- MCB in the Power Panel will control each circuit. All circuit and points shall be suitably numbered for identification.
- Circuit and point wiring shall be carried in Rigid PVC conduits of size not less than 30mm diameter for circuit and 25mm dia for point wiring.
- Circuit shall have not more than two points.

T. S. 1.4.7 Earthing System

Earthing System Used- Maintenance free Chemical Earthing of Dual Pipe Technology. Outer Dia of 88 mm with 48mm inner Dia of 80-100 micron galvanization and Wall thickness of inner pipe 3mm and 2mm of outer pipe, It is filled with the highly conductive material with sealing at both ends with lead terminal of 75 X 6 mm at top. Along with 25 kgs of Earth Enhancing Compound. The chemical compound should be tested and certified by any International accredited or BIS (Bureau of Indian Standards) Accredited laboratory. The testing laboratory should be ISO 9001 & ISO 14001 certified.

Installation Instruction.

The application of GREGEL/GRESLO for a driven earth rod involves the following steps.

1. Drill or auger a 75mm-150mm diameter hole to a depth of 150mm less than the length of the copper bonded earth rod to be installed.

(e) Saturate the hole by dousing with water.

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- (f) Place the earth rod into a central position in the hole and drive the rod 300mm if possible into the soil at the bottom of the hole.
- (g) Take the GREGEL/GRESLO and mix with 10 litres of water.
- (h) Immediately pour mix directly into augured hole.
- (i) Repeat steps 4 and 5 in accordance with recommended number of application of GREGEL/GRESLO.
- (j) Backfill the remainder of the hole with excavated soil /Garden Soil.

T. S. 1.4.8 Fixing of Fluorescent Fittings.

To fix fluorescent fittings as prescribed. The fitting shall be fixed on wall or ceiling on PVC square blocks the fitting shall be suspended from the ceiling by means of twin down suspension rods, fabricated from 16 S W G 19 mm conduits with ball socket flanges. The down rods shall be painted with two coats of white enamel paint. The mounting height of the fitting shall be between 250 cm to 270 cm from flooring as specified. The necessary mounting fitting shall be suspended from ceiling by M.S.galvanized chain or M.S. 1/4" diameter suspension hooks with adjustable length. The fluorescent fitting shall be complete with all Electrical accessories such as polyester filled copper wounded ballast, insert contact motor lamp holder, starter holder, starter, PF improvement capacitor, fluorescent tube, duty wired with 23/0076 PVC insulated flexible wire with copper conductor. The fittings shall be connected to ceiling rose with twin copper PVC to PVC flexible wire of 14/0.193 copper conductor.

T.S. 1.4.9 Fixing of Electric Ceiling Fan.

To fix ceiling fan suitable to work on 230V/ 250V, 50 C/S. A.C. supply complete with 5 stage Electronic regulator, blades duty painted with stove enamel white paint, 2 Nos. of canopies down suspension rod, insulator shake. The fan motor shall be capacitor start and shall have double ball bearings.

The fan shall be suspended from ceiling by providing "S" type hook anchored to the reinforcement of the slab, making good the patch work and provided circular T. W. ring 13mm thick and of 150mm dia, properly fixed to the ceiling by three numbers of philplugs, wood N. F. screw. The fan shall be mounted just above the adjacent light fixtures. Length of suspension rod shall be adjusted accordingly. The can shall be connected by twin PVC/FVC insulated cord with copper conductor of size 14/0193 mm.

T.S. 1.4.10 Fixing of Exhaust Fan

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To install and commission exhaust fan conform to I.S. 2312, suitable to work on 230V/250Volts 50 c/s single phase of 415 Volts 50 C/S, 3 phase supply. Single Phase motor shall be capacitor start and run type. The motor shall be totally enclosed with rotor mounted on ball bearings. The impeller shall be provided with metal blades fitted on robust die cast hub. The complete assembly shall be balanced to minimize vibrations. The frame shall be fabricated from the sheet steel with fan suspended from the frame on rubber mounting to eliminate vibrations. The fan and the steel frame shall be finished with Dark Gray stoved enamel paint. The fan shall be complete with wire mesh guard. The fan shall be fixed on window frame or by making suitable round opening in the wall. The fan shall be connected to supply outlet near the mounting and provided with 16 SWG copper earthing.

SECTION -II-COMMISSIONING & TESTING.

- 1.0 Checking, Pre - Commissioning Test and Commissioning.
- 1.1 Scope
- 1.2 General Requirements
- 1.3 PVC insulated armoured cable 1.1 K.V grade.
- 1.4 Cubicle type switch boards and distribution boards.
- 1.5 Testing and Commissioning of wiring.
- 1.6 Commissioning

T.S. 1.1 SCOPE.

Checking alignment, tightness, meager testing of current carrying Equipment, measurement of earth resistance, earth continuity and pre-commissioning tests of Electrical equipments and commissioning of entire Electrical installation shall be the responsibility of the Electrical Contractor. The contractor shall carry out such tests in the presence of the authorized representative of the owner.

T.S. 1.2 General Requirements

- a) To check for tightness of all bolts, clamps, Electrical connections and earth connections.
- b) To check supply of material and equipments as per the requirements

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and specifications.

- c) To carry out physical inspection to ensure proper alignment.
- d) To carry out all checks and tests specified by the manufacturer as well as prescribed in the relevant code of practices for installation
- e) All necessary tests shall be carried out for lighting, power and earth system. The result of these tests shall be properly recorded and the contractor should submit duly certified record.

T.S 1.3 PVC insulated armored cable 1.1 K. V. grades.

Manufacturer tests certificate for tests carried out as mentioned in I.S. 1554 shall be submitted before obtaining approval to the use of the cable

- a) Inspection and testing at site.
The cable shall be inspected on arrival at site and in case of any damage found to the cable the same shall be rejected and shall be replaced by new one.
After installing and joining the following tests shall be carried out in the presence of University Engineer.
- b)
 - 1). Continuity Test
 - 2). Absence of cross phasing
 - 3). Insulation resistance test with 1000 Volts megger.

T.S. 1.4 Cubicle type switch board and distribution boards.

Arrangement shall be made to inspect and test the units in the presence of University Engineer at Manufacturer's works before delivery.

- 2. Routine test as per I S shall be carried out in the presence of University Engineer and furnish the test certificate.
- 3. Physical inspection to check gauge of M.S. sheet used, sizes of angle irons used shall be carried out before painting.
- 4. Inspection shall also be carried out at the time of anti-corrosion pre-treatment and final paint.
- 5. Heat run test as mentioned below should also be carried out at the works in the presence of University Engineer who shall select the panel for the purpose.

Test shall be carried out at full rated current of the incoming switch

The rated current shall flow through entire length of Main busbar.

The temperature rise of the busbar shall not exceed 40 °C above

- * Physical checking of all components, earthing and cable connection.
- * Checking connections of instruments and their accuracy
- * Insulation test
- * H.V. test
- * Mill volt drop test for contact at least for 10% circuit
- * Checking of phasing

T.S. 1.5 Testing and commissioning of wiring Installation

The Contractor shall be responsible for testing and commissioning of the Installation before handing it over to the owner. He shall carry out the tests as detailed below

Insulation Resistance

As prescribed in L E Act and Rules, insulation resistance test shall be carried out with 500 volts meger for installation up to 250 volts and with 1000 volts meger for 415 volts installation.

3. Continuity Test

The test shall be carried out to ensure proper continuity of all the current carrying conductors.

Polarity Test

- a) In low voltage installation linked single pole, switches are installed throughout in the phase conductor
- b) In 3 Phase 4-wire installation, no linked single-phase pole switch is installed in any of the phase conductor of the supply.

(d) Earth Continuity Test

The Earth continuity conductor shall be tested for Electrical continuity and Electrical resistance of the same along with the earthing lead measured from the

connection with earth electrode to any point in the earth. Continuity conductor shall not exceed one Ohm.

T.S. 1.6

Commissioning.

- b) Before commissioning any equipment, the contractor shall take due permission of the authorized representative of the owner.
- c) Approval of the equipment and/or system including their installation by the representative of the owner does not relieve the contractor from responsibility and liability for the performance guarantee stipulated.
- d) The contractor will make the final delivers on completion of requisite formalities specified and indicated in the specifications and all equipments installed are tested commissioned to run least for 15 days without any interruption/trouble.

14.LIST OF APPROVED MAKES / BRANDS FOR MAJOR ITEMS.

Item Description	Makes / Brand
L.T. Switchgear	
Enclosed in sheet steel with H.R.C. fuses for 63 Amp and above	L&T, Siemens
Cast iron with rewirable fuses.	Bosma, KEW, CPL.
Cast iron or enclosed in sheet steel changeover switch.	KEW, Bosma, CPL
Circuit Breakers (Moulded case).	L&T, Siemens, Legrand
Miniature Circuit Breakers	L&T, Siemens, Legrand
Earth leakage circuit breakers.	L&T, Siemens, Legrand
Cubical panel switchgear accessories.	GLOBAL POWER SYSTEM,CLASSIC.
Terminal block.	Elmex, Everest, Jyoti, Phoenix, Connectwell
TPN / DP Switches / Isolators.	L&T, Siemens, Legrand
Rotary CAM type, Selector switch.	Siemens, Thakoor, Kaycee
Start / Stop push button stations.	L&T, Siemens, Cutler-Hammer, Kaycee
Contactors	L & T, Schneider
Indicating lamp (Neon Type)	Siemens, Vaishno or equivalent approved by relevant standards
Indicating lamp (LED Type)	Siemens, Altos or equivalent approved by relevant standards
H.R.C. Fuse.	Siemens, L&T, English Electric
Distribution Boards.	
With MCB's.	L&T, Siemens, Legrand
With HRC Fuse	L&T, Siemens
Cables (XLPE)	Polycab, Finolex, RR Kabel
Socket / Lugs.	Dowells, Jainson, or equivalent approved by relevant standards
PVC Wires.	Finolex, Polycab, RR Kabel, Anchor
Conduit.	
Rigid PVC conduit and accessories.	Precision, Diamond
PVC casing-n-capping	Modi
Screws.	Nettle Fold, King Fold
Piano switches flush mounting (5 to 15 Amps.) / wall sockets & plugs (surface mounting), Modular Switches (5 to 15 Amps.) holder - pendant / batten / angle, three plate ceiling rose (for 3 core twisted flexible wire), 30 Amps. D.P. Ticcino type switch fuse with indicating lamp, bell push surface mounting, flush mounting.	Anchor, Vinay, Legrand
Wall socket and plugs metal clad (ray roll type).	Legrand, L & T
PVC Board.	Sunwood, Presto-Plast or ISI marked.

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PUNE CAMPUS

Special accessories concealed / decorative (plate switches).	Roma-Anchor, Legrand - Mosaic, Mylink
Two / Three core flexible wires.	Polycab, Fixocab, Anchor, RR Kabel
Lamps.	
GLS Filament.	Philips, Bajaj, Crompton
Fluorescent, HPMV, HP / LP-SV, Halogen / MLL / 9W, 11W & CFL.	Philips, Bajaj, Crompton
Fluorescent Tube: - 28 W, 36 W	Philips, OSRAM, GE
Halogen / MLL / 9W, 11W & metal halide.	Philips, Crompton, Bajaj.
LED	Sysca, Philips, Wipro, Crompton
Fans	
Exhaust fans / pedestal fans air circulators.	Crompton, Bajaj, Almonard, GEC-Alstom,
Ceiling fans with double ball bearings.	Crompton , Havell's, Polar
Ballasts	
Copper Ballast for fluorescent lamp	Philips, Crompton, Bajaj.
Electronic Ballast	Philips, Intelux, Integral
Meters	
Meters: Ammeter & Voltmeter (Analog).	Automatic Electric, Meco, Kusum-Meco, L & T
Energy meters.	Automatic Electric, Meco, Havell's, Elymer, L & T
Fan's Electronic Regulator	Vinay, Anchor, Legrand
DWC HDPE - double wall corrugated pipes	REX or equivalent approved by relevant standards
Lightning Arrester	TERCEL MAKE -TZ-90 / DMSGI MAKE / INDELEC, FRANCE,(2ND GENERATION)
Cable Tray	CLASSIC,LEGRAND(CABLOFIL),AVDHOOT
Cable	FINOLEX / POLYCAB / RR KABEL
Earthing	FAST ELECTRODE /MAP WORLD/SPA INFRA
Transformer	STARRATEDPWD/MSEDCL APPROVED MAKE
Any other this tender work related technical requirements.	AS PER ENGINNER INCHARGE

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LIST OF APPROVED MAKES OF THE MATERIALS (ELECTRICAL WORKS)

The Electrical contractor shall supply the materials of the following makes & shall quote the rates applicable to them. Fill in the last column about his makes to be used.

MATERIAL	MAKES
1) PVC wires- FR	RR Kabel / Finolex / Polycab
2) Cables	RR Kabel / Finolex / Polycab
3) Telephone & Coaxial Cable	RR Kabel / Finolex / Polycab
4) Casing & Capping	Modi / Precion / Prestoplast
5) PVC pipe/ accessories	Precision / Finolex / Jain
6) Al. lugs	Dowels / CTI / Jainsons
7) Cable glands	HMT / Jainsons / Braco
8) Switches (Modular)	Mosaic / Panasonic Anchor Roma Fan regulator step type.
9) Switches-regular	Anchor Penta. Fan regulator to be deluxe of socket size.
10) MCB/DB	Legrand Lexic/ Indo Asia / Hagger
11) Under floor Raceways or Cable Management System	Legrand / MK
12) Light Fittings	Philips / Wipro – Any Florescent Fitting with Electronic Ballast & CFL Fitting with Low Loss Copper Ballast
13) Ceiling Fan	Crompton High Speed
14) Exhaust Fan	Almonard / Crompton / Usha / Havells
15) Earth strip/wire	EC Grade only
16) CAT-6 Cable	D-link / Finolex / RR/Polycab
17) Cable Trays	Profab / Asian
18) MV Switchgear	
a) MCCB	Siemens / L & T / ABB
b) S.F.Unit	Siemens / L & T / ABB
c) HRC Fuses	Siemens / LT /
d) Contactors	Siemens / L & T / ABB
19) Meters (digital)	Conserve/ HPL / AE
20) Indicating lamps (Only LED type)	Teknic / Telemecanique
21) CT S / PT S	Kappa / AE / Pragati

- | | |
|----------------|-------------------------------|
| 22) Capacitors | Subodhan/ Ducati / Prabodhan |
| 23) PF Relay | DUCATI / Sycon / Rudrashakti. |
| 24) Connectors | Wago / Connect well. |
| 25) Any other | TO BE APPROVED BY CONSULTANT |

Above makes of materials are indicative. Some of the material from above list may not be required for this project. This shows the requirement of acceptable quality for work to be executed. The contractor shall get each & every material approved by the Electrical Consultant / Electrical Engineer before execution of the work.

LIST OF APPROVED MAKE AIR CONDITIONING

- | | |
|-------------------------------------|---|
| 1. AC Unit | -Daikin/Toshiba/Mitsubishi |
| 2. Copper Piping | -Rajco, Mexflow, Mandev, Hariom. |
| 3. GI site fabricated duct. | -Jindal, TATA, SAIL-Bhilai, Llyods |
| 4. Thermal insulation | -Supreme, Paramount, Equivalent |
| 5. Acoustic insulation | -UP twiga, K-Flex, Equivalent |
| 6. SWIRL DIFFUSER | -Cosmos, Trox, Air product, Dynacraft, Equivalent |
| 7. 16 GI duct Volume control damper | -Cosmos, Trox, Air product, Dynacraft, Equivalent |
| 8. Insulated Flexible duct | -UP twiga/caryeire/Atco. |
| 9. CO2 MONITORING SYSTEM | -Sensor make- Honeywell, omicron, Dwyer. Radix.
For Controller Honeywell, omicron, Carel, Messung. |
| 10. MS stand | -Jindal, TATA |
| 11. Exhaust fan | -Dynair, Kruger, Systemair, Nicotra. |
| 12. Cu' refrigerant piping | -Rajco, Mexflow, Mandev, Hariom. |
| 13. Communication cabling | -Polycab, Finolex |
| 14. PVC Drain piping | -Prince, Finolex |

**Proposed Interior Work of Jankidevi Bajaj Institute of
Management Studies Building for Shreemati Nathibai Damodar
Thackersey Women's University, Pune Campus.**

VOLUME – III

Bill of Quantity (BOQ)

And

Drawings

SUMMARY

	WORK DESCRIPTION	AMOUNT
A	FURNITURE WORK	8536063.58
B	ACOUSTICAL WORK	1763394.00
C	ELECTRICAL WORK	1014600.23
D	AIR CONDITIONING WORK	1574488.31
	GRAND TOTAL FROM (A) TO (D)	12888546.12

A) Furniture Work

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
1	2	3	4	5	6	7
		COUNTERS				
1	CNT 2	Providing and fixing Enquiry Counter in Main Atrium as per design and layout made out of 18 mm thk commercial ply frame, with 50 mm thick front facia finished with laminate as per selection, It also includes 8 mm clear glass with glass film. The counter is provided with two drawers made out of 12 mm bottom plywood and front and side with 18 mm ply. Two keyboard drawers made out of 18 mm ply. Ledge in 18 mm ply for CPU at bottom. The drawers fixed with telescopic channels. All exterior exposed surfaces finished with 1 mm laminate and All Internal surfaces with 0.8 mm laminate etc.all complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	3.00	Rmt	13950.00	41850.00
2	CNT 1	Providing and fixing Enquiry Counter in VIP waiting as per design and layout made out of 18 mm thk commercial ply frame, with 50 mm thick front facia finished with laminate as per selection, It also includes 8 mm clear glass with glass film. The counter is provided with Single drawer made out of 12 mm bottom plywood and front and side with 18 mm ply. Single keyboard drawer made out of 18 mm ply. Ledge in 18 mm ply for CPU at bottom. The drawers fixed with telescopic channels. All exterior exposed surfaces finished with 1 mm laminate and All Internal surfaces with 0.8 mm laminate etc.all complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.10	Rmt	13850.00	29085.00
		WALL PANNELING IN ATRIUM				
	WP1	Providing and fixing wall panelling in Main Atrium as per design and layout				
3	WP1 a	Ledge in Panneling - Providing and fixing 38 mm thk ledge in ply to beam bottom with 38 mm x 6 mm lipping on both edges.	28.50	Rmt	2200.00	62700.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		All sides are finished with 1mm thk laminate as per selection.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
4	WP1 b	Ledge in wall Panneling - providing and fixing 75 mm thk ledge in 18mm thk ply frame (50x50 @ 600mm c/c) with 8 mm thk ply on both sides. All sides finished with 1mm thk laminate.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	12.75	Rmt	2400.00	30600.00
5	WP1 c	Ply panelling to column - providing and fixing ply panelling to column in 18 mm thk ply on all sides finished with 1mm thk laminate.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	23.36	Sqm	2400.00	56064.00
6	WP1 d	Wall Panelling - providing and fixing ply panelling behind enquiry counter in atrium in 18 mm thk ply frame (50 x50 @1000mm c/c) with 8 mm thk ply on side, finished with 1mm thk laminate. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	18.87	Sqm	2750.00	51892.50
7	WP1 e	Providing & Fixing 10mm toughned glass on the top of SU fixed with TW beading. Exposed edges of the glass are polished. Provided with glassfilm as per design.The furniture to be made as per drawing.The material to be used as mentioned in the	1.85	Sqm	5300.00	9805.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
8	WP1 f	Providing and fixing ply panelling in board room in 18 mm thk ply frame (50 x50 @600mm c/c) with 8 mm thk ply on side, finished with 4mm thk veneer with melamine polish. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	10.00	Sqm	4300.00	43000.00
9	WP1 f	Providing and fixing ply panelling for AC in board room, Executive Cabin 1 & 2 in 18 mm thk ply frame (50 x50 @600mm c/c) with 8 mm thk ply on side, finished with 4mm thk MDF finished with Luster Paint. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	20.00	Sqm	2350.00	47000.00
WORKSTATIONS						
10	WST 1, WST 2, WST 4	Providing and fixing Two sides Workstations without drawer in Computer lab as per design and layout made out of 18 mm ply and 68mm to 70mm thick partition of 1.2meter height in 50 x 50 mm thick ply frame and 8mm thick ply on both side finished with 1mm thick laminate, Divider between two tables in 18 mm thick finished with laminate edges to be rounded and all exposed surfaces finished with 1 mm laminate as per design. nternal surfaces to be provided with 0.8 mm laminate. it includes workstations of both the sides of partition and 8mm thk clear glass fixed on SS stud with laser. Footrest in 50mm dia SS pipe fixed on sides with necessary hardware as per drawing, site conditions, approved	42.00	Rmt	18900.00	793800.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		samples, instructions from engineer incharge / Architect etc.				
11	WST 3,	Providing and fixing One Side Workstations without drawer in Computer lab as per design and layout made out of 18 mm ply , Divider between two tables in 18 mm thick finished with laminate edges to be rounded and all exposed surfaces finished with 1 mm laminate as per design. nternal surfaces to be provided with 0.8 mm laminate.8mm thk clear glass fixed on SS stud with laser. Footrest in 50mm dia SS pipe fixed on sides with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	18.00	Rmt	7000.00	126000.00
12	WST 5, WST 7	Providing and fixing One Side Work stations with drawer in Exam control room as per design and layout made out of 18 mm ply , Divider between two tables in 18 mm thick finished with laminate edges to be rounded and all exposed surfaces finished with 1 mm laminate as per design. Internal surfaces to be provided with 0.8 mm laminate.8mm thk clear glass fixed on SS stud with laser. The counter is provided with Single drawer made out of 12 mm bottom plywood and front and side with 18 mm ply. Footrest in 50mm dia SS pipe fixed on sides with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	10.80	Rmt	9600.00	103680.00
13	WST 6	Providing and fixing Two sides Workstations with drawer in Exam control room as per design and layout made out of 18 mm ply and 68mm to 70mm thick partition of 1.2meter height in 50 x 50 mm thick ply frame and 8mm thick ply on both side finished with 1mm thick laminate, Divider between two tables in 18 mm thick finished with laminate edges to be rounded and all exposed surfaces finished with 1 mm laminate as per design. nternal surfaces to be provided with 0.8 mm laminate. it includes workstations of both the sides of partition and 8mm thk	9.60	Rmt	25200.00	241920.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		clear glass fixed on SS stud with laser. The counter is provided with Single drawer made out of 12 mm bottom plywood and front and side with 18 mm ply. Footrest in 50mm dia SS pipe fixed on sides with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
14	WST 8	Providing and fixing Workstations/ Counter in Main office as per design and layout made out of 18 mm ply , with running table at 0.75 meter height of Facia 30mm thk finished in Laminat and all exposed surfaces finished with 1 mm laminate as per design. nternal surfaces to be provided with 0.8 mm laminate. Each workstation have seperate Single keyboard drawer made out of 18 mm ply with telescopic channels and space for CPU at bottom in 18 mm ply finished with laminate. Front of counter 1.2meter in height 18 mm ply finished with laminate and It also includes 8 mm clear glass fixed with beading and glass film all complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	6.15	Rmt	1250.00	7687.50
		TABLES				
15	TBO, TBO a	Providing and fixing table of size 1350 x 600 mm for Faculy Staff as per design and layout made of 18 mm ply frame provided with 30 mm thick table facia in 18 mm ply finished with laminate. all exposed surfaces finished with 1mm laminate.Internal surfaces to be provided with 0.8 mm laminate. The table will have storage with one drawer made out of 12mm plywood and storage below with shutter. Table front made out of 18 mm plyfinished with laminate. The drawers to be provided with telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	8.00	No	11200.00	89600.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
16	TB1, TB1 a	Providing and fixing table of size 1650 x 600 mm for Faculty & Visiting Staff as per design and layout made of 18 mm ply frame provided with 30 mm thick table facia in 18 mm ply finished with laminate. all exposed surfaces finished with 1mm laminate.Internal surfaces to be provided with 0.8 mm laminate. Single drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and seperate SIngle keyboard drawer made out of 18 mm ply and space for CPU at bottom. The drawers to be provided with telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	21.00	No	13400.00	281400.00
17	TB2, TB2 a	Providing and fixing table of size 1650 x 750 mm in Main Office as per design and layout made of 18 mm ply edges provided with 30 mm thick table facia in 18 mm ply finished with laminate. all exposed surfaces finished with 1mm laminate.Internal surfaces to be provided with 0.8 mm laminate. Single drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and seperate SIngle keyboard drawer made out of 18 mm ply and space for CPU at bottom. The drawers to be provided with telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.00	No	15500.00	31000.00
18	TB3	Providing and fixing table of size 1800 x 750 mm in Main Office as per design and layout made of 18 mm ply edges provided with 30 mm thick table facia in 18 mm ply finished with laminate. all exposed surfaces finished with 1mm laminate.Internal surfaces to be provided with 0.8 mm laminate. Single drawers	3.00	No	17000.00	51000.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		made out of 12 mm bottom plywood and front and side made out of 18 mm ply and seperate Single keyboard drawer made out of 18 mm ply and space for CPU at bottom. The drawers to be provided with telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
19	TB4	Providing and fixing table of size 2100 x 750 mm in HOD Cabin as per design and layout made of 18 mm ply edges provided with 30 mm thick table facia in 18 mm ply finished with laminate. all exposed surfaces finished with 1mm laminate.Internal surfaces to be provided with 0.8 mm laminate. The table will have storage with one drawer made out of 12mm plywood and storage below with shutter. Single keyboard drawer made out of 18 mm ply and space for CPU at bottom. The drawers to be provided with telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.00	No	21000.00	42000.00
20	TB5	Providing and fixing Director table / Executive cabin of size 2100 x 900 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick table facia in 18 mm ply finished with veneer. all exposed surfaces finished with 4mm thick veneer and melamine polished. Internal surfaces to be provided with 0.8 mm laminate. Table top will have 10mm thk clear glass top fixed on SS stud with laser. front facia of table will have 10mm thk clear glass with glass film and fixed on mirrior screw. Exposed edges of the glass are polished. The table will have storage with one drawer made out of 12mm plywood and storage below with shutter. The drawers to be provided with	2.00	No	52400.00	104800.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		telescopic channels.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
21	TB6	Providing and fixing Director / Executive cabin Meeting table of size 2750 x 1200 mm as per design and layout made of 18 mm ply edges provided with 37 mm thick and 150 mm width table facia in 18 mm and 12 mm ply finished with 38 mm x 38 mm BTC beading as per design and melamine polished on both side. all exposed surfaces finished with 4mm thick veneer and melamine polished. Internal surfaces to be provided with 0.8 mm laminate. The vertical support of table is made out of 38 x 38 mm ply box & 8 mm thick ply on both side with 4mm thk veneer finish. Top of the table will have POP UP switch board provision as per drawing.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.00	No	58750.00	117500.00
22	TB7	Providing and fixing Board Room Meeting table of size 5500 x 2000 mm as per design and layout made of 18 mm ply edges provided with 37 mm thick and 150 mm width table facia in 18 mm and 12 mm ply finished with 38 mm x 38 mm BTC beading as per design and melamine polished on both side. all exposed surfaces finished with 4mm thick veneer and melamine polished. Internal surfaces to be provided with 0.8 mm laminate. The vertical support of table is made out of 38 x 38 mm ply box & 8 mm thick ply on both side with 4mm thk veneer finish. Top of the table will have POP UP switch board provision as per drawing.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per	1.00	No	117600.00	117600.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
23	TB8	Providing and fixing Seminar hall Meeting table of size 5500 x 2000 mm as per design and layout made of 18 mm ply edges provided with 37 mm thick and 150 mm width table facia in 18 mm and 12 mm ply finished with 38 mm x 38 mm BTC beading as per design and melamine polished on both side. all exposed surfaces finished with 1mm thick laminate. Internal surfaces to be provided with 0.8 mm laminate. The vertical support of table is made out of 44 x 44 mm ply box & 8 mm thick ply on both side with 1mm thick laminate. Top of the table will have POP UP switch board provision as per drawing.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.00	No	87600.00	87600.00
24	TB9	Providing and fixing common room table of size 1800 x 900 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick and 150 mm width table facia in 18 mm and 10 mm ply finished with laminate as per design. all exposed surfaces finished with 1mm thick laminate. Internal surfaces to be provided with 0.8 mm laminate. The vertical support of table is made out of 32 x 32 mm ply box & 8 mm thick ply on both side with 1mm thick laminate. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	3.00	No	12350.00	37050.00
25	TB10	Providing and fixing Atrium model table of size 2100 x 1200 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick and 150 mm width table facia in 18 mm and 10 mm ply finished with laminate as per design. all exposed	1.00	No	16200.00	16200.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		surfaces finished with 1mm thick laminate. Internal surfaces to be provided with 0.8 mm laminate. The vertical support of table is made out of 44 x 44 mm ply box & 8 mm thick ply on both side with 1mm thick laminate. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
26	TP1, TP1 a	Providing and fixing Waiting area & HOD cabin Teapoy of size 600 x 600 x 450 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick and 75 mm width table facia in 18 mm and 10 mm ply finished with laminate as per design. Vertical support in 18 mm and 10 mm ply finished with laminate as per design. all surfaces finished with 1mm thick laminate. Plastic bushing to be fixed at bottom. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	8.00	No	3450.00	27600.00
27	TP2	Providing and fixing Waiting Area Teapoy of size 900 x 450 x 450 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick and 75 mm width table facia in 18 mm and 10 mm ply finished with laminate as per design. Vertical support in 18 mm and 10 mm ply finished with laminate as per design. all surfaces finished with 1mm thick laminate. Plastic bushing to be fixed at bottom. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	3.00	No	3450.00	10350.00
28	TP3	Providing and fixing Director room & Executive Cabin Teapoy of size 600 x 600 x 450 mm as per design and layout made of	2.00	No	7100.00	14200.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		18 mm ply edges provided with 30 mm thick and 75 mm width table facia in 12 mm and 10 mm ply finished with 4 mm thick veneer on both side and melamine polish with clear glass of 8 mm thick on top as per design. Vertical support in 12 mm and 10 mm ply finished with 4 mm thick veneer on both side and melamine polish as per design. Plastic bushing to be fixed at bottom. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
29	TP4	Providing and fixing Director room & Executive Cabin Teapoy of size 900 x 450 x 450 mm as per design and layout made of 18 mm ply edges provided with 30 mm thick and 75 mm width table facia in 12 mm and 10 mm ply finished with 4 mm thick veneer on both side and melamine polish with clear glass of 8 mm thick on top as per design. Exposed edges of the glass are polished Vertical support in 12 mm and 10 mm ply finished with 4 mm thick veneer on both side and melamine polish as per design. Plastic bushing to be fixed at bottom. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.00	No	7800.00	15600.00
		STORAGE UNITS				
30	SU	Providing and fixing low height storage unit for VIP waiting Counter CNT 1 as per design and layout 1430X600X800 made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. 10 mm thk toughned glass with film to be fixed with beading on top of the unit . The	1.15	Smt	11700.00	13,455.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
31	SU1	Providing & Fixing low height storage unit in Waiting lobby/ Faculty room/ Visiting Faculty/ Exam control / Main Office 900 x 400 mm deep x 750 mm heigh as per design and layout made out of 18 mm ply , having two drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and storage below with openable doors made out of 18 mm ply finished with1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The drawers to be provided with telescopic channels. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	7.43	Sqm	16000.00	118800.00
32	SU2	Providing & Fixing low height storage unit in HOD cabin 1200 x 400 mm deep x 750 mm heigh as per design and layout made out of 18 mm ply , having three drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and storage below with openable doors made out of 18 mm ply finished with1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The drawers to be provided with telescopic channels. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.70	Sqm	16000.00	43200.00
33	SU3	Providing & Fixing low height storage unit in Main Office and Archive Store 1200 x	6.30	Sqm	16000.00	100800.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		450 mm deep x 750 mm height as per design and layout made out of 18 mm ply, having three drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and storage below with openable doors made out of 18 mm ply finished with 1mm thick laminate to all exposed surface externally and 0.8 mm thick laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The drawers to be provided with telescopic channels. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
34	SU3 a	Providing & Fixing low height storage unit in Archive Storage 1200 x 450 x 1200 as per design and layout made out of 18 mm ply, storage with openable doors made out of 18 mm ply finished with 1mm thick laminate to all exposed surface externally and 0.8 mm thick laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	0.90	Sqm	11700.00	10530.00
35	SU4	Providing & Fixing low height storage unit in Main Office and Common room 1500 x 450 x 1200 as per design and layout made out of 18 mm ply, storage with openable doors made out of 18 mm ply finished with 1mm thick laminate to all exposed surface externally and 0.8 mm thick laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.88	Sqm	11700.00	33696.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
36	SU5	Providing & Fixing low height storage unit in Main Office and Common room 1650 x 450 x 1200 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	5.94	Sqm	11700.00	69498.00
37	SU6	Providing & Fixing low height storage unit in HOD cabin 2000 x 450 x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.50	Sqm	11700.00	17550.00
38	SU7	Providing & Fixing low height storage unit in Main office 2000 x 450 x 1200 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.52	Sqm	11700.00	29484.00
39	SU8	Providing & Fixing low height storage unit in HOD cabin in L shape 2000 /1800 x 450 x 750 as per design and layout made out of	3.19	Sqm	11700.00	37293.75

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
40	SU9	Providing & Fixing low height storage unit in Library 1500 x 450 mm deep x 750 mm high as per design and layout made out of 18 mm ply , having three drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and storage below with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The drawers to be provided with telescopic channels. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.13	Sqm	16000.00	18000.00
41	SU10	Providing & Fixing low height storage unit in Main office 3500 x 450 mm deep x 1200 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	4.20	Sqm	11700.00	49140.00
42	SU11	Providing & Fixing low height storage unit in Director room L shape 2600 + 1400 +	1.47	Sqm	15000.00	21978.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		900 x 400 mm deep x 660 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 4mm thick veneer and melamine polished to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
43	SU1 2	Providing & Fixing low height storage unit in Executive Cabin L shape 3000 +1200 x 400 mm deep x 660 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 4mm thick veneer and melamine polished to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.86	Sqm	15000.00	27918.00
44	SU1 3	Providing & Fixing low height storage unit in Main Atrium 3000 x 450 mm deep x 750 mm heigh as per design and layout made out of 18 mm ply , having two drawers made out of 12 mm bottom plywood and front and side made out of 18 mm ply and storage below with openable doors made out of 18 mm ply finished with1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The drawers to be provided with telescopic channels. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer	2.25	Sqm	16000.00	36000.00

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		incharge / Architect etc.				
45	PST 1	Providing & Fixing storage Below Pantry(L shape) as per design and layout made out of 18 mm ply vertical support and Shutters, with magnetic ball catches. Providing 1mm thk laminate to all external exposed surfaces and 0.8mm thk laminate to all internal surfaces Foldable shelf made out of 18mm ply with 0.8 mm thk laminate finish. All edges are finished with teakwood lipping. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.89	Sqm	9800.00	28297.50
46	FST1 ,FST 2,FS T3,FS T4, FST5	Providing & Fixing full height storage unit in respective areas as per design and layout made out of 18 mm ply , storage with openable doors made out of 25 mm block board finished with1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	31.08	Sqm	10900.00	338772.00
47	FST6 ,FST 7	Providing & Fixing full height Pigeon hole type storage unit in Library 1450 x 450 mm deep x 2100 as per design and layout made out of 18 mm ply , storage finished with 1mm thk laminate to all exposed surface, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	7.46	Sqm	11200.00	83496.00
48	BST	Providing & Fixing low height built in	2.05	Sqm	13900.00	28460.25

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
	1	storage unit in Board room 2730 x 370 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 4mm thick veneer and melamine polished to all exposed surface externally and 0.8 mm thk laminate internally, Storage top 8mm thk clear glass, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
49	BST 2	Providing & Fixing low height built in storage unit in Faculty room And Class room 2250 x 370 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	6.41	Sqm	11400.00	73102.50
50	BST 3	Providing & Fixing low height built in storage unit in Faculty room And Class room 1450 x 220 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	4.13	Sqm	11000.00	45457.50

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
51	BST 4	Providing & Fixing low height built in storage unit in Faculty room And Class room 1450 x 220 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	4.13	Sqm	11000.00	45457.50
52	BST 5	Providing & Fixing low height built in storage unit in Exam room And Class room 2250 x 450 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	6.41	Sqm	12600.00	80797.50
53	BST 6,7	Providing & Fixing low height built in storage unit in Multipurpose hall And Computer lab 1915 x 450 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally,Storage top is in 18mm thk granite top with edge rounding, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer	8.27	Sqm	13500.00	111577.50

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Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		incharge / Architect etc.				
54	BST 8,9	Providing & Fixing low height built in storage unit in Class room-1 class room-2 , 2730 x 370 mm deep x 750 as per design and layout made out of 18 mm ply , storage with openable doors made out of 18 mm ply finished with 1mm thk laminate to all exposed surface externally and 0.8 mm thk laminate internally, magnetic ball catches, all edges finished with TW lipping etc. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	11.13	Sqm	10900.00	121317.00
		LEDGES				
55	LDG 1	Providing and fixing ledge in director & executive room in 18mm thk ply finished with veneer. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	2.00	NO	5800.00	11,600.00
56	LDG 2	Providing and fixing ledge in classroom in 18mm thk ply finished with laminate.The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	7.00	NO	3800.00	26,600.00
		PARTITION				
57	LP1, LP1a , LP3	Providing & Fixing Low Height Partition in Faculty Room / Visiting Faculty size 1650 / 3375 / 3500 x 1200 x 68 mm thk. partition, including 50x50 mm ply frame work only and covering with 8mm commercial ply on both sides finished with 1mm thk laminate to all exposed surface, including insertion of 8mm thk clear glass	38.10	Sqm	5200.00	198120.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		fixed with BTC beading, cutting of holes to partition, provision for electrical conduits, item complete. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
58	LP2	Providing & Fixing Low Height Partition in Faculty Room / Visiting Faculty size 7350 x 1200 x 68 mm thk. partition, including 50x50 mm ply frame work only and covering with 8mm commercial ply on both sides finished with 1mm thk laminate to all exposed surface, cutting of holes to partition, provision for electrical conduits, item complete. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	8.82	Sqm	4700.00	41454.00
59	FP1, FP2, FP3	Providing & Fixing Full Height 68 mm thk, Partly glazed and Partly dead Partition for HOD cabin it including 50x50mm thk ply frame work (@ 600mm c/c) with 8mm commercial ply on both sides finished with 1mm thk laminate to all exposed surface. 10mm thk clear glass fixed with BTC beading, cutting of holes to partition, provision for electrical conduits, item complete. Provided with 12mm thk toughened glass door fixed with floorspining and pivot of approved make with glassfilm as per design. Partition is provided with 3 track glazed ventilaters above 2400mm height, including 5mm thk clear glass with 25mm x 12mm thk alluminium sliding sections of S.S. brush of approved make The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	54.39	Sqm	7100.00	386169.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
60	FP4	Providing & Fixing Full Height Partition with door of 800 x 2100 mm in ply frame with locking arrangement for Cashier counter in Main office 68 mm thk. partition, including 50x50 mm ply frame work (@ 600mm c/c) only and covering with 8mm commercial ply on both sides finished with 1mm thk laminate to all exposed surface, including insertion of 10mm thk clear glass fixed with BTC beading, cutting of holes to partition, provision for electrical conduits, item complete. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	7.53	Sqm	5700.00	42921.00
		CARREL DESK IN LIBRARY				
61	CRL 1, CRL 2	Providing & Fixing Carrel desk for Library 18 mm in ply finished with 1mm thk laminate to all exposed surface, with side support of 30mm thk and 900mm high in ply finished with 1mm thk laminate. 50mm Dia SS Pipe as footrest for each seating Dividing partition in between two carrels is 1200mm high & 18mm thk both side finished with 1mm thk laminate. Between Two seating divider is 300mm high in 18mm ply finished with 1mm thk laminate on both side. The furniture to be made as per drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	22.20	Rmt	13800.00	306360.00
62	CRL 3	Providing & Fixing Carrel desk for Library 18 mm in ply finished with 1mm thk laminate to all exposed surface, with side support of 30mm thk and 900mm high in ply finished with 1mm thk laminate. 50mm Dia SS Pipe as footrest for each seating. Between Two seating divider is 300mm high in 18mm ply finished with 1mm thk laminate on both side. The furniture to be made as per drawing. The	9.85	Rmt	4700.00	46295.00

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
		BOOKSTACK IN LIBRARY				
63	STK 1	Providing Library bookstack rack in MS fabrication of size 1000mm width x 2100mm height x 300mm deep with powder coated in vertical frame of 25mm x 25mm x 2mm MS square tube and horizontal shelf in 25mm x 25mm MS square tube with 1.8 mm thick MS perforated sheet with ivory powder coating. 18mm ply to be fixed to sides of rack vertically and finish with 1mm thk laminate on both side. book stack to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	40.00	No	10000.00	400000.00
		BENCH				
64	BGH 1	Providing two seater bench in all classroom as per design and layout made out MS square frame 25mm x 25mm x 1.6mm square frame and 1.6mm thk perforated sheet with powder coated with writing top/ Seat/ Back rest of 18mm thk rubber wood with edge rounding and finished with melamine polish. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	124.00	No	6550.00	812200.00
		FALSE CEILING				
65	FSC1 , 16 / 17 BDR 19	Providing and fixing false ceiling of 12mm thick tubular Acoustic Armstrong/ Everest/ AMS boards of approved make, shape and sizes as per drawings including powder coated G.I. wall angle of 20mm x 20mm size, G.I. grid runners of size 20mm	416.33	Sqm	1545.00	643231.01

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		x 38mm at 600mm center to center both ways and suspended using G.I. wire 3mm wire including fixing using butterfly clips and fasteners including transporting, scaffolding all necessary labour and machinery, finishing etc. complete. Spec : Bd. R. 19 Page No. 462				
66	FSC1 a	False ceiling in Auditorium, Statue Area, HOD Cabin, Board Room & Director Room for AC work Providing and fixing in true horizontal level 600 mm. X 600 mm. false ceiling using hot dipped galvanized steel section, exposed surface with pre-coated capping. The above grid is suspended at every 1200mm c/c. in both directions using 2.0 mm. thick pre-straightened GI wire laying ceiling tiles size 600mmx600mmx15mm surface having 3 coats of white paint with Fine Fissured, back of the tile duly sanded and finished with a coat of protective paint over the formed grid complete.	197.37	Sqm	1000.00	197373.00
67	FSC2 ,13 / 17 BDR	Providing and fixing frame work of galvanised iron for suspended false ceiling which includes galvanised iron perimeter channels of size 27 mm & 0.5 mm thick having one flange of 20 mm and another of 30 mm along with perimeter of the ceiling, fixing in brick wall / partition with the help of rawal plugs and screws, suspending galvanised iron intermediate channels of size 45 mm and 0.9 mm thick with two flanges of 15 mm each from the soffit at 1200 mm centers with steel galvanised iron hanger of width 25 mm x 0.5 mm fasteners, ceiling section of 0.5 mm thickness having curved wedge of 51.5 mm and two flanges of 26 mm each with lips of 10.5 mm fixed to the intermediate channel with the help of connecting clips and in direction perpendicular to the intermediate channel at 450 mm centers, 12.5 mm dry walls screws at 230 mm centers; fixing screws mechanically either with screw driver or drilling machine with suitable attachment etc. complete. Spec : As directed by Engineer in charge.	61.32	Sqm	675.00	41391.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
	15 / 17 BDR	Providing and fixing false ceiling of 10 to 12 mm thick decorative boards of fibrous plaster of paris including scaffolding if necessary all architectural work like mouldings, cornices, coves, domes, cups as per detailed drawings and three coats of spray painting to boards etc. complete. (excluding frame work, runners and mild steel suspenders). Spec : As directed by Engineer in charge.	61.32	Sqm	730.00	44763.60
68	FSC3	Providing and fixing suspended ceiling in Atrium above Statue made out of 18mm thk ply box 100mm x 150mm all sides finished with 1mm thk laminate and as drawing. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	39.60	Rmt	1000.00	39600.00
PAINTING WORK						
69	15 / 14 BDO	Providing and applying pearl/ luster finish paint of approved colour and shade to the existing plaster surface including scaffolding, preparing the surface, applying the acrylic wall putti etc. complete. Spec : As directed by Engineer In Charge	1069.71	Sqm	214.00	228,918.37
70		Providing and applying pearl/luster finish paint of approved colour and shade to the existing plastered surface including scaffolding, preparing the surface, applying primer and the acrylic wall putti etc. complete.	350.00	Sqm	190.00	66,500.00
	5 a / 15 BDP 5	Providing & applying washable oil-bound distemper of approved colour and shade to old & new surfaces in one coat including scaffolding, preparing the surfaces. (excluding the primer coat.) complete. Spec. No.: Bd. P.5 Page No. 413	100.00	Sqm	25.00	2,500.00
71	5 b / 15 BDP 5A	Providing & applying washable oil-bound distemper of approved colour and shade to old & new surfaces in two coats including scaffolding, preparing the surfaces. (excluding the primer coat.) complete.	250.00	Sqm	36.00	9,000.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		Spec. No.: Bd.P.5 Page No. 413				
72	17 / 14 BDO	Providing and applying two coats of appex Appex Ace white exterior paint of approved manufacture and of approved colour to the plastered surfaces including cleaning ,preparing the plaster surface ,applying primer coat ,scaffolding if necessary , and watering the surface for two days complete	300.00	Sqm	160.00	48,000.00
73	4 / 14 BDO 3	Providing and applying two coats of lead/zinc base oil paint of approved colour to new structural steel work and iron work in buildings including scaffolding if necessary, cleaning and preparing the surface etc. complete.	150.00	Sqm	57.00	8,550.00
		CIVIL WORK				
74	STG 1	Providing and fixing stage as per design and layout in auditorium 3000mm x 6000mm x 600mm main frame work shall be in 50x50x3mm MS tubular section grid @ 600 c/c. Frame shall be coverd with 12mm thk ply finished with 12mm thk Rubberwood with melamine polish with edge rounding as per design. The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	18.00	Sqm	7576.00	136360.00
75		Providing second class Burnt Brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in superstructure including striking joints, racking out joints, watering and scaffolding Complete. (Pedestal for statue)	2.07	Cum	7000.00	14515.20
76		Providing internal cement plaster 12mm thick in single coat in cement mortar 1:4 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing complete. (Pedestal for statue)	7.20	Sqm	157.00	1130.40
77		Providing and laying telephone black /	7.20	Sqm	4500.00	32400.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		Amba White / Cadburybrown / RBI red / Ocean Brown granite stone of 18 to 20 mm thick for cladding etc. On C.M. 1:6 including filling joints with polymer base filler nosing the sharp edges wherever necessary, curing, etc. complete. (Pedestal for statue)				
78		Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts, com-plete.	5.00	Sqm	500.00	2500.00
		MISCELLANEOUS WORK				
79		CURTAINS IN AUDITORIUM				
		Providing and fixing curtains of aproved fabric, which should be available in wide choice of weaves, colours, textures, waights and sizes. Fade and stain resistans light filtering room darkning fabrics.stching in gathered plates , mounted on chanel with hooks and bearing etc complete .The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	37.80	Sqm	1000.00	37,800.00
80		BLINDS IN RESPECTIVE AREAS				
		Providing and fixing curtains of aproved fabric, which should be available in wide choice of weaves, colours, textures, waights and sizes. Fade and stain resistans light filtering room darkning fabrics finish selected by architects from manufacturers available colours cloths mounted on rollers with spindls , nylon bearing,tempered steel spering and other related accessories requierd for fixing . The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	220.00	Sqm	1300.00	286,000.00
81		MIRROR IN RESPECTIVE AREAS				
		Providing and fixing 5mm thk mirrors with 4mm thk ply for backing fixed with ss mirroir screws in respective areas as per	10.00	Sqm	2250.00	22,500.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. no	Item Code	Description of work	Qty	Unit	Rate	Amount
		shown in layout .The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.				
82		SIGNAGE				
		Providing & fixing signage at main entrance . Letters (size 432mm ht & 38mm depth) shall be box type in MS with black powdercoating.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.00	LS	120750.00	120,750.00
83		DIAS				
		Providing & Fixing Dias in Auditorium in 18 mm in ply finished with 1mm thk laminate to all exposed surface, 50mm Dia SS Pipe as footrest. The furniture to be made as per drawing.The material to be used as mentioned in the list of approved make complete with necessary hardware as per drawing, site conditions, approved samples, instructions from engineer incharge / Architect etc.	1.00	LS	7900.00	7,900.00
		TOTAL COST				8536063.58

B) ACOUSTICAL BOQ

S.no	Description	Qty	Unit	Rate	Total
1	FIRST CEILING IN GLASSWOOL & WELDED MESH.				
	FRAME : Providing & fixing of 50mm thk. 64 kg/m3 density Glass wool. Glass wool to be fixed on the slab directly with washer and necessary binding wire for Acoustical insulation as per detail instructions including levelling and scaffolding etc.	288.15	sqm	1200	345780.00
2	WALL PANELLING				
	Providing & Fixing of G.I frame work, Glass wool of 64kg/m3 density & finish with 12mm foam. G.I.frame fabricated with 50 x 37.5 x 0.5 G.I. 'C' section @1220 mm c/c, Ceiling sections 80 x 26 x 0.5 @ 400mm c/c with 50mm thk 64 kg/m3 density glasswool fixed with welded mesh back of G.I. 12 x 12mm square of 24 guage (as per approved sample), including	312.00	sqm	2422	755664.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

S.no	Description	Qty	Unit	Rate	Total
	wooden dutta , scaffolding etc complete G.I frame work shall be finished with jute fabric on gripper system system as per specification, fixed on 75x12mm ply patty complete as per design, drawings and Architect/ consultant instruction including scaffolding etc complete				
3	Laminated panelling: GI frame shall be finished with 8mm thk ply finished with 1mm thick laminate upto lintel lvl.	75.00	sqm	1800.00	135000.00
4	Panelling finished with lustre paint: GI frame shall be finished with 4mm thick MDF	94.00	sqm	454.00	42676.00
5	Rubberwood panelling : GI frame shall be finished with 8mm thk rubberwood fixed on 8mm thk ply base upto lintel lvl.	58.00	sqm	2933.00	170114.00
6	CARPET				
	3 mm PVC flooring	314.16	sqm	1000.00	314160.00
	TOTAL COST				1763394.00

C) Electrical Work

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
	ELECTRICAL WORK				
	FR WIRES				
1	Supplying & erecting mains with 2 x 1.5 sq.mm + 1 x 1.5 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (Lighting Circuit, Computer Wiring)	630.24	m	55.68	35,091.76
2	Supplying & erecting mains with 2 x 2.5 sq.mm + 1 x 1.5 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (for power poin, UPS DB incoming)	150.00	m	71.68	10,752.00
3	Supplying & erecting mains with 2 x 4.0 sq.mm + 1 x 2.5 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (for AC Point)	200.00	m	101.96	20,392.00
4	Supplying & erecting mains with 4 x 4.0 sq.mm + 1 x 2.5 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (for DB incoming)	0.00	m	177.36	-

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
5	Supplying & erecting mains with 4 x10 sq.mm + 1 x 6 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (for DB incoming)	0.00	m	411.00	-
6	Supplying & erecting mains with 4 x16 sq.mm + 1 x 10 sq.mm . F.R copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW (for DB incoming as)	0.00	m	651.70	-
POINT WIRING					
7	Point wiring for light / fan / bell Concealed type in min 20 mm PVC conduit with 1.5 sq.mm. FR grade copper wire with modular type switch and required accessories as per specification no. WG-PW/CW (light pt -225 Nos., fan pt -42 Nos., Bell pt. -10)	43.00	Each	671.96	28,894.28
8	Supplying & erecting modular type electronic step regulator two module ISI mark approved make duly erected on provided plate and box with wiring connections complete.	24.00	Each	399.40	9,585.60
9	Supplying & erecting modular type switch 6A / 10 A ISI mark approved make duly erected on provided plate and box with wiring connections complete.	230.00	Each	87.40	20,102.00
10	Supplying & erecting modular type 3pin 6 A multi socket with safety shutter ISI mark approved make duly erected on provided plate and box with wiring connections complete.	396.00	Each	101.40	40,154.40
11	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 1 module duly erected flush to wall with required chiselling and finishing with cement mortar / POPas per required to match the background in an approved manner.	175.00	Each	202.00	35,350.00
12	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 2 module duly erected flush to wall with required chiselling and finishing with cement mortar / POPas per required to match the background in an approved manner. (for AC- 6 nos.)	2.00	Each	202.26	404.52
13	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 3 module duly erected flush to wall with required chiselling and finishing with cement mortar / POPas per required to match the background in an approved manner.	33.00	Each	233.26	7,697.58
14	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with	6.00	Each	278.00	1,668.00

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
	required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.				
15	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 6 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	178.00	Each	363.00	64,614.00
16	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 8 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background in an approved manner.	17.00	Each	432.00	7,344.00
17	Supplying and erecting 16/20/25A. Starter (Moduler Type range) 2 Modul for AC unit on provided box complete and duly concealed with necessary material and connected.	5.00	Each	332.40	1,662.00
18	Supplying & erecting modular type telephone socket one gang with safety shutter ISI mark approved make duly erected on provided plate and box with wiring connections complete.	38.00	Each	82.40	3,131.20
19	Supplying & erecting modular type Computer Jack RJ 45 with safety shutter ISI mark approved make duly erected on provided plate and box with wiring connections complete.	175.00	Each	135.40	23,695.00
	Supplying, installing & testing UTP Connector (RJ-45) as per specification No.WG-NAS/UTPC.	350.00	Each	79.00	27,650.00
SIGNAL SYSTEM					
		-	-	-	-
20	Supplying & erecting telephone cable 2 pairs of 0.5mm dia. laid in provided PVC casing /conduit as per specification No.WG-TW with telephone socket.	650.00	m	19.84	12,896.00
21	Supplying & erecting jelly filled armoured telephone cable 10 pair with 0.5mm dia.laid in provided trench as per specification No. WG-TW.	20.00	m	120.24	2,404.80
22	Supplying & erecting telephone cable 50 pairs with 0.5mm dia.laid in PVC casing/ conduit as perspecification No. WG-TW .	50.00	m	272.12	13,606.00
23	Supplying, erecting & commissing Junction box suitable for 50 pairs as per specification No.WG-TW.	2.00	Each	1335.76	2,671.52
24	Supplying and installing, testing & commissioning of Digital (Hybrid) type EPABX of 8x20 (4 Digital +16 analog) extensions suitable upto 120 extensions.	1.00	Each	51032.68	51,032.68
25	Supplying & installing UTP networking Cat-6 cable suitable for LAN / WAN Computer net-working as per specification no. WG-COC/NC	2472.00	m	44.40	109,756.80

INTERIOR WORK OF JDBIMS BUILDING FOR SNDT WOMEN'S UNIVERSITY, PUNE CAMPUS

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
26	Supplying & fixing 24 port patch Panel with tool- less keystone jacks in provided U Rack complete as per specification no. WG-NAS .PP	10.00	Each	10399.54	103,995.40
CONDUITS					
27	Suppling & laying Rigid PVC conduit 20 mm Dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1	100.00	m	81.57	8,157.00
28	Suppling & laying Rigid PVC conduit 25 mm Dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC, para no. 1.2.1	150.00	m	95.00	14,250.00
29	Supplying & erecting I.S.I. mark Rigid P.V.C. conduit 32 mm. dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC, para no. 1.2.1	200.00	m	146.00	29,200.00
30	Supplying & erecting PVC trunking (PVC casing-n-caping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON ,para no.1.1.2	80.00	m	37.12	2,969.60
31	Supplying & erecting PVC trunking (PVC casing-n-caping) of size 32 mm with accessories on wall/ceiling as per specification No: WG-MA/CON ,para no.1.1.2	120.00	m	44.40	5,328.00
32	Supplying & erecting PVC box trunking (PVC casing-n-caping) of size 50x16/20 mm with accessories on wall/ceiling as per specification No: WG-MA/CON ,para no.1.1.2	70.00	m	91.24	6,386.80
DB'S & MCB'S					
33	Supplying & erecting original 1.25 mm CRCA sheet metal enclouser with 30 A, 3 pin plug & earth socket and 30 A , 3 pin plug top with 30 A triple pole MCB complete erected on angle iron frame.(For UPS chargeing-1)	0.00	Each	1699.00	-
34	Supplying and erecting tripal pole and neutral distribution board (TPNDB) with door surface/flush mounted SP/ TP MCBs total 12 ways on iron frame(Vertical Busbar type) as per specification No. SWSWR/ MCBDB (Main UPSDB)	0.00	Each	5558.00	-
35	Supplying and erecting single pole and neutral distribution board (SPNDB) with door surface/flush mounted with 2 ways for incoming and 10 ways for outgoing SP MCB's on iron frame/wooden board as per specification No. SWSWR/ MCBDB	0.00	Each	1393.00	-
36	Supplying and erecting triple pole & neutral distribution board (TPNDB) with door surface /flush mounted SPMCB of 12 ways ,on iron frame/ laminated board.(Horizontal bus bar type) as per specification No. SW-SWR/MCBDB. (UPSDB, ACDB)	2.00	Each	2588.04	5,176.08

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
37	Supplying and erecting triple pole & neutral distribution board (TPNDB) with door surface /flush mounted SPMCB of 24 ways ,on iron frame/ laminated board.(Horizontal bus bar type) as per specification No. SW-SWR/MCBDB. (LDB, ACDB, UPSDB)	0.00	Each	3741.04	-
38	Supplying, erecting & marking FPMCB 6 Amp. to 32 Amp. in provided distribution board as per specification No. SW-SWR/MCB. (DBs incomer)	0.00	Each	1071.22	-
39	Supplying, erecting & marking FPMCB 40 Amp. to 63 Amp. in provided distribution board as per specification No. SW-SWR/MCB. (DBs incomer)	0.00	Each	1395.22	-
40	Supplying, erecting & marking DPMCB 6A to 32Amp., C- series (for motor/power) in provided distribution board as per specification No. SW-SWR/MCB. (UPS DB incomer)	2.00	Each	519.22	1,038.44
41	Supplying, erecting & marking TPMCB 6A to 32Amp., C- series (for motor/power) in provided distribution board as per specification No. SW-SWR/MCB.	1.00	Each	778.22	778.22
42	Supplying, erecting & marking SPMCB 6 Amp. to 32 Amp. C series (motor/power) in provided distribution board as per specification No. SW-SWR/MCB.	0.00	Each	176.22	-
43	Supplying, erecting & marking SPMCB 6 Amp. to 32 Amp. B series (For Lighting) in provided distribution board as per specification No. SW-SWR/MCB.	0.00	Each	165.22	-
LIGHT FITTINGS					
44	Supplying and erecting LED square / cicular 5/6 W down lighter having pressure die-cast aluminium housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clipss for flush type complete .(5 W LED considered)	7.00	Each	770.70	5,394.90
45	Supplying and erecting LED square / cicular 9/12 W down lighter having pressure die-cast aluminium housing ,opal translucent cover,mounting arrangement with board for surface type or spring loaded mounting clipss for flush type complete.(9 W LED considered)(for Recess mounting)	1.00	Each	1064.70	1,064.70
46	Supplying and erecting LED square / cicular 13 to 15 W down lighter having pressure die-cast aluminium housing , opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clipss for flush type complete.(13 W LED considered)(for Recess mounting)	10.00	Each	1241.10	12,411.00
47	Supplying and erecting LED square / cicular 16 to 20 W down lighter having pressure die-cast	5.00	Each	1340.85	6,704.25

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
	aluminium housing , opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clipss for flush type complete.(18 W LED considered)(for Surface mounting)				
48	Supplyig & erecting approved make 1 X 14 W T-5 white stove enamelled / powder coated box type flou.fitting with 14 W electronic ballast having pf > 0.9 fixed at ceiling or on wall as per specification no. FG-IDF/BFF with lamp.	0.00	Each	615.76	-
49	Supplyig & erecting approved make 1 X 28 W T-5 white stove enamelled / powder coated box type flou.fitting with 28W electronic ballast having pf > 0.9 fixed at ceiling or on wall as per specification no. FG-IDF/BFF with lamp.	0.00	Each	913.76	-
50	Supplying and erecting CFL 5 to 8 W with ceramic adopter p.f.more than 0.9(8 W CFL)	0.00	Each	141.28	-
51	Supplying and erecting Decorative Wall Fitting	5.00	Each	1500.00	7,500.00
52	Supplying and erecting square shaped CRCA /die-cast aluminium powder coated housing LED Panel light (slim edge-lit) 600 X 600mm suitable for 36 W-40W with provision for plane front frame with translucent cover fixed to the housing complete.	28.00	Each	3348.00	93,744.00
53	Supplying & erecting Fresh aircum Exhaust Fan of light duty 230 V A.C. 50 cycles 225 mm 1400 RPM metallic body, plastic blades, wiremesh, duly erected in an approved manner and marking sr. no. and date of erection.	0.00	Each	1316.06	-
54	Supplying & erecting regular / standard model Ceiling Fan of 1200mm. sweep complete erected in position as per specification no. FG-FN /CF.	25.00	Each	1802.26	45,056.50
55	Supplying & fixing Anchor type Fastner Fan Hook with 2 Nos. of 10mm dia x 75mm long with necessary materials for ceiling Fan.	27.00	Each	92.80	2,505.60
56	Supplying & erecting fan clamp of 30 x 5 mm. M.S flat of required length & 10 mm. M.S. bolt & nuts erected with necessary hook of 10 mm. M.S round bar & painted	27.00	Each	180.80	4,881.60
57	Supplying and erecting LED street light fitting 12 to 18 W, with PF > 0.95 class IP 65 and above Housing of pressure die cast alluminium alloy and heat sink extruded alluminium complete as per specification No FG-ODF/FLS-2 (WI-FI wall side)	8.00	Each	1765.00	14,120.00
58	Supplying and erecting Recess mounted 20W LED wall washers, tilted 70° outwards and swivels 360° to offer best illumination on the wall with any colour with driver complete. (Including Compatible Driver) (Entrance foyer wall fittings And down light)	11.00	Each	3546.00	39,006.00
59	Supplying and erecting LED Flood light fitting of	12.00	Each	2648.00	31,776.00

NO.	DESCRIPTION OF WORK	QTY	UNIT	RATE	AMTOUNT
	30-40W, including lamp, with PF > 0.95, class IP 65 and above class IP 65 and above Housing of pressure die cast alluminium alloy and heat sink extruded alluminium complete per specification No FG-ODF/FLS-2 (Down lighter in WI- FI court)				
60	Supplying and erecting LED street light fitting suitable above 26W to 36W lamp, including lamp, with PF > 0.95 class IP 65 and above Housing of pressure die cast alluminium alloy and heat sink extruded alluminium complete as per specification No FG-ODF/FLS2 (For Name Plate)	3.00	Each	2600.00	7,800.00
61	Supplying and erecting Spot LED square / circular 9 W down lighter having pressure die-cast aluminium housing , opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clipss for flush type complete. (For Furniture)	10.00	Each	1460.00	14,600.00
62	Supplying and erecting Recess mounted 9W LED wall washers, tilted 70° outwards and swivels 360° to offer best illumination on the wall with any colour with driver complete. (Including Compatible Driver) (For Statue area ceiling)	4.00	Each	2250.00	9,000.00
63	Supplying and erecting Recess mounted 9W LED wall washers, tilted 70° outwards and swivels 360° to offer best illumination on the wall with any colour with driver complete. (Including Compatible Driver) (For Statue area Rear wall bottom)	4.00	Each	2800.00	11,200.00
	Total to Main summary				1014600.23

D) Air conditioning work

Sr. No	Description	Qty	Unit	Unit Rate (Rs)	Total Amount (Rs.)
	LO Side of Auditorium/Ductable Unit				
1	Installation, lifting, shifting testing and commissioning of 16.5 TR ceiling suspended Ducted unit.	2	Nos	17,640	35,280
2	Supply and Installation of Copper Piping with insulation (13 mm for gas line and 9 mm for liquid line) for 16.5 TR ceiling suspended Ducted unit. Rate should be considering all the curcuits.	55	Rmt.	1,177	64,751
3	GI site fabricated duct.				
	22 G	100	Sq mtr	853	85,345
	24 G	170	Sq mtr	738	125,488

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. No	Description	Qty	Unit	Unit Rate (Rs)	Total Amount (Rs.)
4	Thermal insulation with 15 mm thick XLPE for ducting.	240	Sq mtr	469	112,617
5	Acoustic insulation for plant rooms, using 24 G GI Z-section, 50 mm thick, 32 Kg per cubic m density glass wool slabs, finished with resin bonded tissue paper and 26 G perforated Aluminum sheet.	40	Sq mtr	789	31,558
6	Acoustic insulation for ducting, using , 25 mm thick, 48 Kg per cubic m density glass wool slabs, finished with resin bonded tissue paper and 26 G perforated Aluminum sheet.	30	Sq mtr	742	22,252
7	Supply and installation of "SWIRL DIFFUSER" with insulated plenum box & side 300 mm dia inlet.	17	Nos.	4,438	75,448
8	Supply& installation of return air grill	5	Sq mtr	4,958	24,788
9	Supply installation of 16 GI duct Volume control damper	2	Sq mtr	7,607	15,215
10	Insulated Flexible duct 300 mm dia	40	RMT	329	13,173
11	CO2 MONITORING SYSTEM Consist of PID controller, duct mounted CO2 sensor, motorized modulating actuator & Louvers with Bird screen in the ceiling (Size- 600mm X 600 mm)	1	NOS	61,800	61,800
12	MS stand for Outdoor unit with powder coating	60	Kg	102	6,120
13	Exhaust fan Cabinet type inline fan 1500 CFM & 15 mm staic pressure with internally insulated with 9 mm nitrile rubber insulation Acoustic property grade	1	NOS	42,458	42,458
14	Cable tray 16 G with cover 450 mm X 75 mm	7	RMT	840	5,880
	LO Side of Board room				
1	Installation, testing & commissioning of Wallmounted type split A.C. Units	2	Nos.	2,500	5,000
2	Cu' refrigerant piping with 9mm thick insulation for liquid line & gas line for 1.8 TR units	50	Rmt	660	33,000
3	Communication cabling between IDU to ODU	52	Rmt	110	5,720
4	PVC Drain piping with insulation				

INTERIOR WORK OF JDBIMS BUILDING FOR SNTD WOMEN'S UNIVERSITY, PUNE CAMPUS

Sr. No	Description	Qty	Unit	Unit Rate (Rs)	Total Amount (Rs.)
	19 mm	50	Rmt	131	6,550
5	MS stand for Outdoor unit with powder coating	10	Kg	102	1,020
	LO Side of Director Cabin 1				
1	Installation, testing & commissioning of Wallmounted type split A.C. Units	2	Nos.	2,500	5,000
2	Cu' refrigerant piping with 9mm thick insulation for liquid line & gas line for 1.8 TR units	50	Rmt	660	33,000
3	Communication cabling between IDU to ODU	52	Rmt	110	5,720
4	PVC Drain piping with insulation 19 mm	50	Rmt	131	6,550
5	MS stand for Outdoor unit with powder coating	10	Kg	102	1,020
	LO Side of Director Cabin 2				
1	Installation, testing & commissioning of 1.5TR wall mounted type split A.C. Units	2	Nos.	2,500	5,000
2	Cu' refrigerant piping with 9mm thick insulation for liquid line & gas line for 1.5 TR units	10	Rmt	443	4,430
3	Communication cabling between IDU to ODU	12	Rmt	110	1,320
4	PVC Drain piping with insulation 19 mm	15	Rmt	131	1,965
5	MS stand for Outdoor unit with powder coating	20	Kg	102	2,040
	Sub Total				839,508

Budgetary Air Conditioning Equipment

Sr. No	Description	Qty	Unit	Unit Rate (Rs)	Total Amount (Rs.)
	All products should be with green gas and with one brand only				
1	Auditorium				
	Supply of Floor standing Air cooled 16.7 TR ducted unit with 2 refrigerant circuits and should be Green gas	2	Nos	241,000	482,000
2	Board room				
	Supply of Ceiling suspended Air cooled 1.8 TR 3 star inverter Wall mounted unit	2	Nos	47,073	94,146
	Supply of Ceiling suspended Air cooled 2 TR & 650 dehumidified CFM cassette units	RQO	Nos	76,250	
3	Director Cabin 1				
	Supply of Ceiling suspended Air cooled 1.8 TR 3 star inverter Wall mounted unit	2	Nos	47,073	94,146
	Supply of Ceiling suspended Air cooled 2 TR & 650 dehumidified CFM cassette units	RQO	Nos	76,250	
4	Director Cabin 2				
	Supply of Ceiling suspended Air cooled 1.5 TR 3 star inverter Wall mounted unit	2	Nos	32,344	64,688
	Supply of Ceiling suspended Air cooled 3 TR & 940 dehumidified CFM cassette units	RQO	Nos	107,734	
	Sub total (Rs.) EQUIPMENT'S				734,980
	Sub total (Rs.) INSTALLATION OF EQUIPMENTS				839,508
	Grand Total				1,574,488

NOTE - RCO- RATE QUOTE ONLY