INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER) PUNE

VOLUME I

Name of work: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-20

Index

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INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH PUNE

(An Autonomous Institution, Ministry of Human Resource Development, Govt. of India)
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Tel: +91-020-25908177; Fax: +91-020-20251566
Website: www.iiserpune.ac.in

Tender NOTICE INVITING e-TENDER (e-Procurement mode)

Indian Institute of Science Education and Research, PUNE invites online **ITEM rate bids in open** bid system from approved and eligible contractors registered with(Any One) CPWD, Maharashtra State PWD, MES departments in composite/ Electrical works category, found eligible as per clause 2 & 3 of NIT for the work mentioned below:

Brief Details of Tender:

Sr. No.	Description of work in Brief	Approx. Estimated cost put to bid (Rs.)	Earnest Money (Rs.)	Period of Completion	Last date & time of online submission of bid	Time & date of opening of bids
1	2	3				
1.	**Electrification of Campus Street light at IISER Pune** NIT NUMBER: **73/ IISER/PUNE/2019-20**	28 lakh	56000/-	45 days	17 10 2019 at 15 00 hrs.	18 10 2019 at 15 30 hrs.

The Tender Document can be downloaded from Central Public Procurement (CPP) Portal https://eprocure.gov.in/eprocure/app or Institute website www.iiserPUNE.ac.in and bid is to be submitted online only through the E-procurement portal up to the last date and time of submission of tender.

Critical Dates of Tender

Sr.No	Particulars	Date	Time in hrs.
1	Date of Online Publication	10 10 2019	16 00
2	Bid Submission Start Date	11 10 2019	15 00
3	Bid Submission Close Date	17 10 2019	15 00
4	Closing date & time for Submission of EMD	17 10 2019	15 00
5	Opening of Technical and Financial bids	18 10 2019	15 30

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 0120-4200462, 0120-4001002, and 91-8826246593.

1) Information & Instructions for Online Bid Submission:

This tender document has been published on the Central Public Procurement Portal (URL:https://eprocure.gov.in/eprocure/app) & Institute website www.iiserpune.ac.in . The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.
More information useful for submitting online bids on the CPP Portal may be obtained at:
https://eprocure.gov.in/eprocure/app .

1.1 The intending bidder must read the terms and condition of NIT carefully. Bidder should submit his bid only if he considers himself eligible and he is in possession of all the required documents.

1.2 Bid documents should be submitted online complete in all respect along with requisite amount of tender fee (cost of bid documents). Complete set of tender documents comprising Volume I, II, III has been made available at e-tender portal (URL:https://eprocure.gov.in/eprocure/app)

1.3 The bidder would be required to register at e-tender portal (URL:http://eprocure.gov.in/eprocure/app For submission of the bids, the bidder is required to have digital Signature Certificate (DSC) from one of the authorized Certifying Authorities.

1.4 Information and instruction for bidders posted on website shall form part of the bid document.

1.5 The bid document consisting of Vol.I – Technical bid, Vol-II- Technical specifications, Vol-III- Financial Bid (BOQ) and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website (URL:https://eprocure.gov.in/eprocure/app) free of cost.

1.6 But the bid can only be submitted after uploading the mandatory scanned documents such as receipt of online payment towards tender fee, in favour of Director, IISER PUNE, scan copies of other required documents as specified in the NIT. The tender fee should deposited online with IISER PUNE within the period of bid submission as specified in the bid document.

1.7 Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online tendering process as per details available on the website. The intending bidder must have valid class-III digital signature to submit the bid.

1.8 On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.

1.9 Contractor can upload documents in the form of JPG format and PDF format.

1.10 Certificate of Financial Turn over: At the time of submission of bid contractor may upload Affidavit/ Certificate from CA mentioning Financial Turnover of last 3 years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

1.11 Contractor has to quote item rate above or below the total estimated cost put to tender and in case bidder quote % rate in the BOQ, then tender shall be rejected.

1.12 The tender document can be downloaded from http://eprocure.gov.in/eprocure/app and be submitted only through the same website.

2. REGISTRATION of Bidder on e-Procurement Portal

2.1 Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.

2.2 As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

2.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

2.4 Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

2.5 Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.

2.6 Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

2.7 The CPP Portal also has user manual with detailed guidelines on enrollment and participation in the online bidding process. Any queries related to process of online bids or queries related to CPP Portal may be directed to the 24x7 CPP Portal Helpdesk.

2.8 The Institute will not be responsible for any type of technical issue regarding uploading of Tender on website. URL:http://eprocure.gov.in/eprocure/app) and any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is **0120-4200462, 0120-4001002, 91-8826246593.**

3. SEARCHING FOR TENDER DOCUMENTS

3.1 There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

3.2 Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3.3 The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

4. PREPARATION OF BIDS

4.1 Bidder should take into account any corrigendum published on the tender document before submitting their bids.

4.2 Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

4.3 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS formats. Bid documents may be scanned with 100 dpi with black and white option.

4.4 To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

5. SUBMISSION OF BIDS

5.1 Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

5.2 The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

5.3 A standard BOQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial

bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

5.4 The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

5.5 The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

5.6 Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

5.7 Kindly add scanned PDF or JPG format files of all relevant documents in a single PDF file of compliance sheet.

6 ASSISTANCE TO BIDDERS

6.1 Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

6.2 Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is **0120-4200462, 0120-4001002, 91-8826246593**

For any technical related queries please call at 24 x 7
Help Desk Number 0120-4001 062 0120-4001 002 0120-4001 005 0120-6277 787
International Bidders are requested to prefix +91 as country code

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER) PUNE

SECTION I -NOTICE INVITING e-TENDERING

1. Indian Institute of Science Education and Research, PUNE invites online **ITEM rate bids** in open bid system from registered electrical agencies, found eligible as per the minimum requirements defined in clause 2 & 3 of NIT for the work mentioned below:

   Name of work &Location: Electrification of Campus Street light at IISER Pune

   NIT NUMBER: 73/ IISER/PUNE/2019-20

Approx. Estimated cost	**:**	**Rs. 28 Lakh**
Period of completion	:	45 days.
Cost of tender documents	:	Rs. 590/- (Rs Five hundred and ninety including GST only) – (Non – Refundable)
Last Dates & time to fill/upload The tender through e-tendering.	:	17 10 2019up to 15 00 hrs.
Time & date of opening of Technical and Financial bids	:	18 10 2019 at 15 30 hrs.

2. The applicant should be registered in appropriate class with **(ANY ONE) CPWD, State PWD, Railways or MES departments in composite/ Electrical /HVAC Works category.** The bidder registration certificate should be valid till the last date of receipt of tender.

3. The agency shall have valid GST/PAN/TAN/ESIC/PF numbers/certificates.

4. The time allowed for carrying out the work will be **45 days** from the date of start as defined in schedule 'C' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender.

5. The bid document is single stage two Envelope e-tendering system can be seen from the Central Public Procurement Portal (URL:https://eprocure.gov.in/eprocure/app) & Institute website www.iiserpune.ac.in The contents of Envelope I & Envelope II are specified in the NIT
6. **Submission of Bid Documents**

Information and instruction for bidder for e-tendering forming part of bid document and posted on website URL:https://eprocure.gov.in/eprocure/app
Last date and time of submission of bid, original EMD and deposition of original EMD and list of documents as detailed below at IISER Pune and uploading the scan copies of the below mentioned documents:

List of Document to be scanned and uploaded within the period of bid submission:

I. Transaction Receipt of online deposit of tender fee and EMD.
II. Enlistment Order of the Contractor (Attested copy).
III. Certificate of Registration for GST and acknowledgement of up to date filed return if required.

7. Tender documents should be submitted online complete in all respect along with requisite amount of tender fee (cost of bid document). Complete set of tender documents comprising Volume I, II, III and financial bids has been made available at e-tender portal http://www.eprocurement & www.iiserpune.ac.in

8. Director, Indian Institute of Science Education & Research, PUNE shall be the "Accepting Authority" hereinafter referred to as such for the purpose of this Contract.

9. Bids must be accompanied by tender fee and bid-security/EMD (Earnest Money Deposit) amount specified for the work in clause 10 payable at PUNE and drawn in favor of The Director; IISER PUNE Bid Security shall have to be valid for 90 days beyond the validity of the bid.

10. **Bid Security/EMD and Tender fee.**

10.1 Bid Security/EMD amounting to Rs 56000/- and tender fee of Rs. 590/- shall be deposited in **IISER PUNE Bank account** through net banking as detailed below failing which the bid will be declared non responsive.

a) 100% EMD amount can be deposited in **IISER PUNE Bank account** through net Banking as detailed below.

Name-IISER PUNE
Bank-State Bank of India
Branch-NCL Campus Branch, PUNE 411008
Current A/c No. 30042605732
IFSC-SBIN0003552

b) A part of earnest money is acceptable in the form of bank guarantee also.
In such case, 50% of earnest money or Rs. 20 lakh, whichever is less, will have to be deposited in shape prescribed above and balance in shape of irrevocable Bank Guarantee from a Scheduled Bank and shall be valid 120 days from the last date of receipt of bid as per standard proforma attached.

Scanned copy of the net banking transaction receipt towards payment of tender fee shall be uploaded on the e-tendering website within the period of bid submission failing which the bid will be declared non responsive.

10.2 Bid Security/EMD of unsuccessful Bidders will be returned to them within 90 days from the date of acceptance of bid of the successful Bidder.

10.3 The Bid Security may be forfeited, if

a) The Bidder withdraws / modifies his Bid or any item thereof after opening of bid.

c) The successful Bidder fails within the specified time limit to commence the work.

11. Bid shall be opened on the day fixed for opening of bids at 15.30hours, in the presence of the Bidders who wish to attend. If the office happens to be closed on the date of receipt of the bids as specified, the bids will be received and opened on the next working day at the same time and venue.

12. Bidder's attention is also drawn to instruction of filling and submission of tender Attached herewith. You may forward your queries on tender documents and /or depute your technical representative for discussion on tender /drawings to clarify doubts, if any, at least two days before the date of submission mentioned in the website.

13. The Bidder may submit their questions/ queries/ clarifications if any, in writing or by email/ fax to reach the IISER Pune at least two days before the date for bid submission. Bidders can send queries on their letter head referring tender on e-mail address registrar@iiserpune.ac.in at least Five days before the start date and time of submission of the bids.

14. If any amendment in the tender document uploaded on the website is necessitated due to any query raised by any bidder including the text of the questions raised (without identifying the source of enquiry) and the responses given will be uploaded as corrigendum on websites (URL:https://eprocure.gov.in/eprocure/app) and www.iiserpune.ac.in Bidders are requested to take note of the corrigendum and quote their rates accordingly.

15. In case revised BOQ is uploaded on website by IISER, tenderer /bidder has to quote in revised BOQ only. The uploading quotation in pre-revised BOQ shall be considered as a willful negligence by the bidder and his quotation shall be considered as non-responsive.

16. **Cost of Bidding**

16.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the IISER, Pune will in no case be responsible and liable for these cost

17. **Site visit & availability of site**

17.1 The Bidder should inform the IISER in advance about the proposed site visit.

17.2 The Bidder, at his own responsibility and risk is encouraged to visit, inspect and Survey the Site and its surroundings and satisfy himself before submitting his Bid as to the form and nature of the Site, the means of access to the Site, the Accommodation he may require etc.

17.2 In general, Bidders shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A Bidder shall be deemed to have full knowledge of the Site, whether he inspects it or not and no extra claims due to any misunderstanding or otherwise shall be allowed.

17.3 The costs of visiting the Site shall be at the Bidders' own expense. Any report shared at the site, by the IISER is subject to verification by the contractor. Any deviations of information in the report and the actual site will not be the responsibility of the IISER.

17.4 The site for the work is available.

17.5 The architectural and structural drawings shall be made available in phased manner as per requirement of the same as per approved program of completion submitted by the contractor after award of the work.

18 Content of Bidding Documents

18.1 Submission of a bid by a Bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be executed and local conditions and other factors having a bearing on the execution of the works.

18.2 The Bidder shall submit the Bid, which satisfies each and every condition laid down in the Bid documents, failing which, the bid is liable to be rejected.

18.3 Notice inviting e-Tender shall form part of the Contract document.

18.3.1 The documents listed below comprises one set of bid document that are issued to Bidders:

PART – I
Technical Bid
Envelope –I
Volume I

a) Notice Inviting Tender (Including eligibility criteria)

b) Item rate contract tender & Contract for works (Tender Form and General Rules and Directions for the Guidance of the Contractor)

c) General Conditions of Contract and General Rules & directions

d) Special Conditions & PARTICULAR SPECIFICATIONS of Contract

e) Safety Code for Contract Work

f) Format of BG

g) Schedule C

Volume- II: Special Conditions & PARTICULAR SPECIFICATIONS of Contract & Tender Drawings

PART-II

Envelop II – (Financial bid)

Volume –III: Financial bid Schedule of quantity (BOQ).

19 **Amendment of Bid Documents**

19.1 Before the deadline for submission of bids, the IISER PUNE may modify the bidding documents by issuing corrigendum.

19.2 Any corrigendum so issued shall be part of the bid documents as well as Contract document and shall be on uploaded website URL:https://eprocure.gov.in/eprocure/app and www.iiserpune.ac.in Bidders should take note of the uploaded corrigendum and submit the tenders accordingly.

20 Bid Validity

20.1 The bid submitted shall become invalid if:

(i) The bidders is found ineligible.
The bidder does not deposit online tender fee with IISER PUNE before the date and time fixed for opening of the bids.

(ii) The bidders does not upload all the documents (including GST registration) as stipulated in the bid document.

(iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.

20.2 The bids submitted shall remain valid for acceptance for a period of 45 days from the date of opening of the technical bids. If any bidder withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the IISER, Pune, then the IISER, Pune shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidder shall not be allowed to participate in the re-tendering process of the work.

21 Bid Opening

21.1 Online bid documents submitted by intending bidders shall be opened only of those bidders, whose tender fee and EMD is deposited online with IISER PUNE and scanned their scanned copies i/c tender documents scanned and uploaded are found in order.

21.2 On the due date and appointed time as specified in clause 11. IISER, Pune will first open **Envelope – I** of bid. Bidders satisfying conditions of 19.1, including amendment as per clause 17 if applicable, in the presence of the Bidders or their representatives who choose to attend In the event of the specified date for Bid opening being declared a

holiday by the IISER, Pune, and the Bids will be opened at the appointed time and location on the next working day.

21.3 Financial bids of the bidders who have submitted unconditional Bids together with requisite Bid security and meeting the eligibility criteria as specified in the NIT shall opened in the presence of representatives of intending bidders on the date and time specified in the NIT for opening of the financial bid.

22. Clarification of Bids

22.1 To assist in the examination and comparison of Bids, the IISER, PUNE may, at its discretion, ask any Bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing or by email / fax, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the IISER, PUNE in the evaluation of the bids.

22.2 No, Bidder shall contact the IISER, PUNE on any matter relating to his bid from the time of the bid opening to the time the contract is awarded.

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

23. Indian Institute of Science Education and Research PUNE, does not bind itself to accept the lowest or any other bid, and reserves the right to reject any or all of the tenders received without assigning any reasons. Bids in which any of the prescribed conditions are not fulfilled or any conditions including that of the conditional rebate put forth by the bidder shall be summarily rejected.

24 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer-in-charge or his representative's estimate of the cost of work to be executed under the contract, the IISER, PUNE may require the Bidder to produce detailed rate analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those rates with the implementation/construction methods and schedule proposed.

25 **Award Criteria**

25.1. IISER PUNE reserves the right without being liable for any damages or obligation to inform the bidder to:

a) Amend the scope and value of the contract to the bidder

b) Reject any or all applications without assigning any reasons

25.2 IISER, PUNE shall award the contract to the Bidder whose evaluated offer / bid has been determined to be the technically suitable and financially lowest and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to execute the contract satisfactorily. The Board of Governors of IISER reserves the right to accept or reject any application and to annul the pre-qualification

process and reject all applications at any time, without thereby incurring any liability to the affected applicants or specifying the grounds for the Employer's action

26 Contractor whose tender is accepted will be required to furnish Performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Schedule C. This guarantee shall be in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'C' including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor and without prejudice to any other right or remedy. The Earnest Money deposited along with tender shall be returned after receiving the aforesaid performance guarantee. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee.

The contractor whose bid is accepted will also be required to furnish either copy of the applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC, and BOCW Welfare Board i/c provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and program chart (Time and Progress) within the period specified in Schedule C.

27 For execution of Electrical & Mechanical (E&M), firefighting & lift components of works, the main agency has to associate with specialized agency as per the laid down minimum eligibility criteria in tender document and submit the details of MOU of such agencies to Engineer in charge.

27.1 Entire work under the scope of Composite bid including Civil, Electrical & Mechanical (E&M), firefighting & lift shall be executed under one agreement.

27.2 The main contractor has to enter into MoU in **Form 'H'** with his associate agency(s) for E & M component conforming to eligibility criteria as defined in the bid document and has to submit details such agency(s) to Engineer-in-charge of minor component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge.

27.3 If the main contractor fails to associate agency/agencies for execution of for Electrical & Mechanical (E&M), firefighting & lift component of work within prescribed time or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of works shall be

withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.

27.4 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.

27.5 Running payment for the work shall be made to the main contractor. In case main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment then on the written complaint of contractor associated Engineer in charge shall serve the show cause to main contractor and after considering the reply of the same he may make the payment directly to the contractor associated as per the terms & conditions of the agreement drawn between main contractor and associate contractor fixed by him, if reply of main contractor either not received or found unsatisfactory. Such payment made to the associate contractor shall be recovered by the Engineer in charge from the next RA/final bill due to main contractor as the case may be.

27.6 The Composite work shall be treated as complete when all the components of the work are complete.

28 Bidder shall quote rates for all items in the BOQ (i.e. Civil, Electrical, LIFTs, firefighting) of work in the financial bid document. It will be obligatory on the part of the tenderer to sign the tender document for all the components (The schedule of quantities, conditions and special conditions etc.)

29 **Disclosures**

Any change in the constitution of the contractor's firm, where it is a partnership firm, as declared in the prequalification documents submitted by the bidders at the time of submission of prequalification documents, should be disclosed to the IISER, PUNE, at any time between the submission of bids and the signing of the contract.

Engineer in Charge

IISER Pune

SECTION I

II) ADDITIONAL INFORMATION AND INSTRUCTION TO APPLICANTS

1.0. GENERAL

1.1 **STATEMENT OF OBJECTIVES, BRIEF SCOPE & PARTICULARS OF THE WORK**

The entire Project Electrification of Campus Street light at IISER Pune
Will be executed under a Single Point Responsibility system under composite contract system. In general scope of work shall be as per BOQ and **ELECTRIFICATION OF CAMPUS STREET LIGHT AT IISER PUNE** IISER Pune complete as per BOQ and architectural/electrical/HVAC drawings.

- Work shall in general be executed as per, general conditions of the contract, particular Technical Specifications, CPWD Specifications available separately at printer's outlets (the bidder may obtain the address of the outlets from any CPWD office/IISER PUNE), National Building code of India, relevant Indian Standard (IS) Codes, etc.

- As these buildings will have green building features, Contractors are expected to provide adequate and complete documentation, towards obtaining certification from GRIHA

- Particulars given above are provisional and liable to change and must be considered only as advance information to assist the bidder.

1.2 Letter of transmittal and other forms for pre-qualification are attached (Annexure I)

1.3. All information called for in the enclosed forms should be furnished against the respective columns in the forms. If information is furnished in a separate document, reference to the same should be given against respective columns. Such separate documents shall be chronologically placed at the end of the prescribed application. If information is 'nil' it should also be mentioned as 'nil' or 'no such case'. If, any particulars/query is not applicable in case of the applicant, it should be stated as 'not applicable'. However, the applicants are cautioned that not giving complete information called for in the application forms required, not giving it in clear terms or making change in the prescribed forms or deliberately suppressing the information may result in the applicant being summarily disqualified. Applications made by Fax and those received late will not be entertained.

1.4. References, information and certificates from the respective clients certifying suitability, technical know-how or capability of the applicant should be signed by an officer not below the rank of Engineer in charge/Chief Project Manager or equivalent.

1.5 The Tenderer is advised to attach any additional information which he thinks is respects to successfully complete the envisaged work. He is however, advised not to attach superfluous information. No further information will be entertained after pre-qualification document is submitted, unless it is called for by Employer.

1.6 The applicant may engage sub vendors for execution of Electrical, Lifts, and HVAC as mentioned below, or may execute the same on their own. In either case, the eligibility criteria given below shall be satisfied.

The applicant Principal Contractor shall associate (Association through MOU / Subsisting agreement) with contractors for Electrical/ HVAC /Fire Detection / Lifts who shall satisfy the eligibility criteria/ given below for each type of specialized Electrical Mechanical agency. For this purposes, the applicant principal contractor shall give at least 2 (Two) names for each category of associates. IISER will approve associates after verifying their credentials and experience. However, responsibility of getting the work done efficiently will rest with the Principal contractor. The consent letter from different associates shall also be enclosed along with tender.

The Principal contractor or Associates shall be required to possess valid license for respective trade for executing the specialized services.

1.7 LETTER OF TRANSMITTAL

The applicant should submit the letter of transmittal attached with tender document duly signed by the agency.

1.8 INTEGRITY AGREEMENT duly signed by the agency along with letter is required to be submitted by the agency.

LETTER OF TRANSMITTAL

From

To
THE DIRECTOR
INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH (IISER) PUNE
Main Building, Dr. Homi Bhabha Road, Pashan,
Pune - 411008

Sub: SUBMISSION OF TENDER DOCUMENTS FOR THE WORK OF "
Name of work &Location ELECTRIFICATION OF CAMPUS STREET LIGHT AT IISER PUNE

NIT NUMBER: 73/ IISER/PUNE/2019-20

Having examined the details given in press notification and the tender document for the above work, I/we hereby submit the tender documents and other relevant information. I/we agree with all the terms and conditions given in the bid document.

1. I/We hereby certify that all the statements made and information supplied in the enclosed forms and accompanying statements are true and correct.

2. I/We have furnished all information and details necessary for eligibility criteria and have no further pertinent information to supply.

3. I/We submit the requisite certified solvency certificate and authorize the Director, IISER, PUNE to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/We also authorize Engineer In charge, PUNE to approach individuals, employers, firms and corporation to verify our competence and general reputation.

4. I/We submit the following certificates in support of our suitability, technical know-how & capability for having successfully completed the following works.

Name of Work:	Certificate from
1.	1.
2.	2.
3.	3.

Enclosures:

Seal of applicant
Date of submission

Signature(s) of applicant(s)

Undertaking to sign the integrity Agreement

To,

……..,
……..,
……..

Sub: SUBMISSION OF TENDER DOCUMENTS FOR THE WORK OF "

Name of work & Location: **Electrification of Campus Street light at IISER Pune**

NIT NUMBER: 73/ IISER/PUNE/2019-20

Dear Sir,

It is here by declared that IISER is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the IISER.

Yours faithfully

Sd/-

Engineer in Charge

Forwarding letter for Integrity Agreement

To

INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH (IISER) PUNE
Main Building, Dr Homi Bhabba Road, Pashan,
Pune 411008

Sub: SUBMISSION OF TENDER DOCUMENTS FOR THE WORK OF
Name of work &Location: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-20

Dear Sir,

I/We acknowledge that IISER is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by IISER. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, IISER shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

To be signed by the bidder and the signatory competent / authorized to sign the relevant contract on behalf of IISER

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this..... Day of..... 20.....

BETWEEN

IISER represented through its Registrar, (Hereinafter referred as the '**Principal/Owner**', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

.....
(Name and Address of the Individual/firm/Company)

Through..... (Hereinafter referred to as the (Details of duly authorized signatory)

"**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No. .....) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for.....
(Name of work)
Hereinafter referred to as the "**Contract**".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

Article 1: Commitment of the Principal/Owner

1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
   (a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**

5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. **Such exclusion may be forever or for a limited period as decided by the Principal/Owner.**

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit**: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to

terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

3) **Criminal Liability:** If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

4) **Article 4: Previous Transgression**

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.

3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/ sub-vendors.

2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority.

Article 7- Other Provisions

1) This Pact is subject to Indian Law, place of performance and jurisdiction is the **Headquarters of the** Principal/Owner, who has floated the Tender.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this **Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.**

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:
.....
(For and on behalf of Principal/Owner)
.....
(For and on behalf of Bidder/Contractor)

WITNESSES:
1.....
(Signature, name and address)
2.....
(Signature, name and address)

Place:

Dated:

CHECK LIST: Details of Enclosures/documents required to be uploaded on website https://eprocure.gov.in/eprocure/app through the E-procurement portal up to the last date and time of submission of tender.

S.N.	Description of item	Scanned copies Uploaded on website	Not uploaded
1.	Eligibility documents- Empanelment/Registration certificate		
2.	Power of attorney as required		
3.	Certificate of Registration as required		
4.	Memorandum of Articles of association as required		
5.	C A certificate for Audited Balance Sheet and Profit & Loss statement for the past five financial years		
6.	Consent letter from associates if Electro-Mechanical services are proposed to be done through Associates, under reference to Para 1.6 A to D under Section-II. Information and Instructions to applicants		
7.	Supporting certificates for technical and financial capability from relevant authorities.		
8	Organization Chart with responsibilities, Curriculum Vitae of personnel proposed for this project.		
9	INTEGRITY AGREEMENT duly signed by the agency along with **letter of Transmittal**		
10	Any other important information.		
11	Scan copies of net banking receipt towards payment of Tender fee		
12	Letter of transmittal duly signed by the bidder.		
13	Uploading of the tender document Vol-I, Vol-II, Vol-III and financial bids		
14	Any other relevant document required to be uploaded on website as per tender conditions.		

Note: - All documents should be arranged as Per S.N. while submitting and mentioned S.N. on right most top corner.

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH – IISER PUNE

Name of work &Location: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-20

SECTION – II

ITEM RATE & CONTRACT FOR WORKS

SECTION- II

Tender Form

ITEM Rate Tender & Contract for Works

Name of work & Location: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-20

(a). Tender(s) to be submitted online by (time) **15.00 hours on 17 10 2019**

(URL:https://eprocure.gov.in/eprocure/app

(b). Tender(s) to be opened in presence of tenderers who may be present at 15.30 **hours on 18 10 2019** in the office of the Engineer in Charge , Indian Institute of Science Education and Research ,PUNE

TENDER

I/We have read and examined the notice Inviting Tender, Schedule, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, special conditions & other document and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Director Of Indian Institute of Science Education and Research PUNE (IISER-PUNE) within the time specified in Schedule 2 **(Two) months viz**, schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to the Conditions of contract and with such materials as are provided for and in respects in accordance with such conditions so far as applicable.

We agree to keep the tender valid for (90) ninety days from the due date of its opening and not to make any modifications in its terms and conditions.

A sum of Rs (figure) ---------- (in words) ----------

---

has been deposited in Deposit at call Receipt of a Schedule bank/demand draft of a scheduled bank/bank guarantee issued by a Schedule Bank as earnest money. If I/we, fail to furnished the prescribed performance guarantee within prescribed period, I/we agree that the said Director Of Indian Institute of Science Education and Research PUNE (IISER-PUNE) or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely, if I/we fail to commence work as specified, I/we agree that Director

Of Indian Institute of Science Education and Research PUNE(IISER-PUNE) or his successors in office shell without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely.

The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

Dated ……. Signature of Contractor

Seal

Postal Address

Witness:

Address:

Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on the Director IISER, PUNE for sum of Rs……(Rupees……..).

The letters referred to below shall form part of this contract Agreement:-

(a)

(b)

(c)

For & on behalf of the Director, IISER PUNE

Signature……..

Dated……. Designation……

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH – IISER PUNE.

Name of work &Location: **Electrification of Campus Street light at IISER Pune**

NIT NUMBER: 73/ IISER/PUNE/2019-20

GENERAL CONDITIONS OF CONTRACT

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH PUNE

(i) General Rules & Directions

1. All work proposed for execution by contract will be notified in a form of invitation to tender prominently displayed in public places and signed by the officer inviting tender or by publication in Newspapers as the case may be.

   This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of earnest money to be deposited with the application, and the amount of the security deposit and performance guarantee to be deposited by successful tenderer and the percentage, if any, to be deducted from bills. Copies of specification, designs and drawings and any other documents required in connection with the work signed for the purpose of identification by the officer inviting tender shall also be open for inspection by the contractor at the office of officer inviting tender during office hours.

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act' 1952.

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

4. Applicable for Item Rate Tender only
   Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, including conditional rebates will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.(Applicable for Item Rate Tender only)

   The rate(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and considering more than fifty paise as rupee one.

   In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, the such lowest contractors may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective origin original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer.

If the revised tendered amount (worked out on the basis of quote rate of individual items) of two or more contractors received in revised offer is again found to be equal, then the lowest tenderer, among such contractors, shall be decided by draw of lots in the presence of Registrar IISER PUNE, Engineer in charge lowest contractors those have quoted equal amount of their tenders.

In case of any such lowest contractor in his revised offer quotes rate of any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated invalid. Such case of revised offer of the lowest contractor or case of refusal to submit revised offer by the lowest contractor shall be treated as withdrawal of his tender before acceptance and 50% of his earnest money shall be forfeited.

In case all the lowest contractors those have same tendered amount (as a result of their quoted rate of individual items), refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each lowest contractors.

Contractor, whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate(s) of any item(s) than their respective original rate quoted already at the time of submission of his bid shall not be allowed to participate in the re-tendering process of the work.

4 A. Applicable for Percentage Rate Tender only

In case of Percentage Rate Tenders, contractor shall fill up the usual printed form, stating at what percentage below/above (in figures as well as in words) the total estimated cost given in Schedule of Quantities at Schedule-A, he will be willing to execute the work. The tender submitted shall be treated as invalid if :

1 The contractor does not quote percentage above/below on the total amount of tender or any section/sub head of the tender.

2 The percentage above/below is not quoted in figures & words both on the total amount of tender or any section/sub head of the tender.

3 The percentage quoted above/below is different in figures & words on the total amount of tender or any section/sub head of the tender.

Tenders, which propose any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort including conditional rebates, will be summarily rejected. No single tender shall include more than one work, but contractors who wish to tender for two or more works shall submit separate tender for each. Tender shall have the name and number of the works to which they refer, written on the envelopes.

4B. In case the lowest tendered amount (estimated cost + amount worked on the basis of

percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/below on estimated cost of tender including all sub sections/sub heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/sub head should not be higher than the percentage quoted at the time

of submission of tender. The lowest tender shall be decided on the basis of revised offers.

In case any of such contractor refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50% of earnest money shall be forfeited.

If the revised tendered amount of two more contractors received in revised offer is again found to be equal , the lowest tender, among such contractors, shall be decided by draw of lots in the presence of Registrar, IISER, PUNE, Engineer In Charge , Dy. Registrar(F&A) & the lowest contractors those have quoted equal amount of their tenders.

In case all the lowest contractors those have quoted same tendered amount, refuse to submit revised offers, then tenders are to be recalled after forfeiting 50% of EMD of each contractor.

Contractor(s), whose earnest money is forfeited because of non-submission of revised offer, shall not be allowed to participate in the re-tendering process of the work.

5. The officer inviting tender or his duly authorized representative will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted, a receipt for the earnest money shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. The earnest money of all unsuccessful bidders shall thereupon be returned to the contractor remitting the same, without any interest.

6. The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any other tender.

7. The receipt of an accountant or clerk for any money paid by the contractor will not be considered as any acknowledgement of payment to the officer inviting tender and the contractors shall be responsible for ensuring that he procures a receipt signed by the officer inviting tender or a duly authorized cashier/accounts officer.

8. The memorandum of work tendered for and the schedule of materials to be supplied by the department and their issue-rates, shall be filled and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderer without having been so filled in and incomplete, he shall request the officer to have this done before he completes and delivers his tender.

9. The tenderers shall sign a declaration under the officials Secret Act 1923, for maintaining secrecy of the tender documents drawings or other records connected with the work given to them. The unsuccessful tenderers shall return all the drawings given to them.

9A. Use of correcting fluid, anywhere in tender documents is not generally permitted. Such Tender is liable for rejection.

10. In the case of Item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below / above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount.
In event no rate has been quoted for any item(s), leaving space both in figure(s), word(s), and amount blank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

10A In case of Percentage Rate Tenders only percentage quoted shall be considered. Any tender for Item containing item rates is liable to be rejected. Percentage quoted by the contractor in Rate percentage rate tender shall be accurately filled in figures and words, so that there is no Tender only discrepancy.

11. In the case of any tender where unit rate of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer in unable to provide satisfactory explanation, such a tender is liable to disqualified and rejected.

12. All rates shall be quoted on the tender form. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words and the amount in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word `Rs' should be written before the figure of rupees and word `P' after the decimal figures, e.g. Rs. 2.15 P and in case of words, the word `Rupees' should precede and the word `Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word `only' it should invariably be up to two decimal places. While quoting the rate in schedule of quantities, the word `only' should be written closely following the amount and it should not be written in the next line.

12A In Percentage Rate Tender, the tenderer shall quote percentage below /above (in figure as well as in words) at which he will be willing to execute the work. He shall also work out the total amount of his offer and same should be written in the figures as well as in Words in such a way that no interpolation is possible. In case of figures, the word 'Rs' should be written before the figure of rupees and word 'P' after the decimal figures e.g. 'Rs 2.15P' and in case of words, the word 'Rupees' should be precede and the word 'Paise' should be written at the end.

13. (i) The Contractor, whose tender is accepted, will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in scheduled C. This guarantee shall be in the form of Deposit at call receipt of any

scheduled bank/ banker's cheque of any scheduled bank/Demand draft of any scheduled bank /Pay order of any scheduled bank or Government Securities or Fixed Deposit Receipt or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form.

(ii) The Contractor, whose tender is accepted, will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to 2.50 % of the tendered/accepted value of the work. The Security Deposit will be collected by deductions from the running bills of the contractor at the rates mentioned above and the earnest money deposited at the time of tenders, will be treated as a part of the Security Deposit. The security amount will also be accepted in the shape of Government Securities. Fixed Deposit Receipt and Guarantee Bonds of a Scheduled Bank or State Bank of India will also be accepted for this purpose provided confirmatory advice is enclosed.

14. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Engineer-in-Charge shall be communicated in writing to the Engineer-in-Charge.

15. GST or any other tax on material in respect of this contract shall be payable by the contractor and IISER PUNE will not entertain any claim whatsoever in respect of the same.

16. The contractor shall give a list of IISER employees, if any, related to him.

17. The tender for the work shall not be witnessed by a contractor or Contractors who himself/ themselves has/ have tendered or who may and has/ have tendered for the same work. Failure to observe this condition would render, tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.

18. The tender for composite works includes, in addition to building work, all other works such as pre-engineered works, building works, sanitary and water supply installations, drainage installation, External Façade, Electrical works, Heating ventilation and air conditioning system, Integrated Building Management system, Lifts, roads and path etc. The tenderer apart from being a registered contractor (B&R) of appropriate class/technically eligible bidder as per criteria defined in the clause 2 of the NIT, must associate himself with agencies of appropriate class which are eligible to tender for sanitary and water supply drainage, electrical Heating ventilation and Air conditioning system, Integrated Building Management system, Solar Water Heating system works in the composite tender.

19. The contractor shall submit list of works which are in hand (progress) in the following form:

Name of work	Name of client & particulars of	Value of work In Rs.	Position of works	Remarks

	works being executed		in progress	

19. The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Engineer in charge may at his discretion without prejudice to any other right or remedy available in law cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

20. Bidder shall have valid Provident Fund Code Number, GST registration No and bidder shall also ensure compliance of the EPF & MP Act, 1952 by the sub-contractors, if any engaged by the contractor for the said work.

21. The standard publications like General Conditions of Contract, Delhi schedule of rates 2016 for civil and 2018 electrical), Specifications for Civil and Electrical works and Delhi analysis of rates 2016 (for civil) and Delhi analysis of rates 2018 (for electrical) with amendments / correction slips up to the last date of submission of tender can be seen free of cost from the website www.cpwd.gov.in. orwww.eprocure.gov.in

22. **A)** Contractor must ensure to quote ITEM rate of in the financial bid.
B) Tenderer shall quote the ITEM rate two places of decimals only.
C) The tenderer shall quote only ITEM RATE which shall be applicable on both Civil and E&M components.

23. If a tenderer quotes nil rates against each item in item rate tender or does not Quote any percentage above/below on the total amount of the tender or any Section / subhead in percentage rate tender, the tender shall be treated as invalid and Will not be entertained as lowest tenderer.

24. Contractor shall not divert any advance payments or part thereof for any other purpose other than needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. mobilization, secured against materials brought at site, secured against plant & machinery and / or for work done during interim stages, etc.) are required to be re-invested in the contracted work to ensure advance availability resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.

25.

(ii) CONDITIONS OF CONTRACT

Definitions:

1 The **contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between the competent authority on behalf of the Director, Indian Institute Of Science Education and Research PUNE and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in-Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

2 In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them :-

i). The expression **works** or **work** shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

ii). The **Site** shall mean the land/ or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.

iii). The **Contractor** shall mean the individual, firm or company, whether incorporated or not, undertaking the works shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

iv). The **Director**, Indian Institute of Science Education and Research PUNE means his successors also.

v) The **Engineer-in-Charge** means Engineer/Officer either from IISER, PUNE or consultant notified by The Director (IISER, PUNE) who shall supervise and be in-charge of work and who shall act on behalf of the Director, IISER for execution of contract.

vi) **IISER** means Indian Institute of Science Education and Research PUNE, or his authorized representative.

vii) **Accepting Authority** shall mean the authority mentioned in Schedule 'C'.

viii) **Excepted Risk** are risks due to riots (other than those on account of contractor's employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority or causes solely due to use or occupation by IISER PUNE of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to IISER-PUNE's faulty design of works.

ix). **Market Rate** shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule `C' to cover, all overheads and profits. Provided that no extra overheads and profits shall be payable on the part(s) of the work assigned to other agency(s) by the contractor as per terms of contract.

x). **Schedule(s)** referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the CPWD Delhi schedule of rates mentioned in Schedule `C' hereunder, with the amendments thereto issued up to the date of receipt of the tender.

xi). **Department** means Indian Institute of Science Education and Research PUNE. (IISER PUNE)

xii). **Specifications** means the specifications contained in tender documents, CPWD specifications 2009 Vol I & II with up to date correction slips, CPWD specifications for internal Electrical works – 2013, external electrical services-2007, DG set & Wet riser, sprinkler specification-2006, Substation works Part IV 2013, Indian standard specification, technical specifications as applicable.

xiii). **Tendered Value** means the value of the entire work as stipulated in the letter of award.

xiv). **Consultant** means Consultant appointed by the Indian Institute of Science Education and Research PUNE.

xv) **Date of commencement of work: The date** of commencement of work shall be the date of start as specified in **schedule "C"** or the first date of handling over

the site, whichever is later, in accordance with the phasing if any, as indicated in the tender documents.

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

4 Headings and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

5 The contractor shall be furnished, free of cost one certified copy of the contract documents except standard specifications. Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract

6 The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.

7. The contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

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

8.1. In the case of discrepancy between the schedules of quantities, the specifications and or the drawings, the following order of preference shall be observed.

(i) Description of items as given in Schedule of Quantities.

(ii) Particular Specifications, Special Conditions and Additional conditions, if any.

(iii) Drawings.

(iv) CPWD Specifications.

(v) General conditions of contract for CPWD works.

(vi) Indian Standard Specifications of B.I.S.

(vii) Manufacturers' specifications & as decided by Engineer-in-charge.

(viii) Sound Engineering practices.

8.2 If there are varying or conflicting provision made in any one document forming part of the contract, the Accepting Authority shall be deciding authority with regard to the intention of the documents and his decision shall be final and binding on the contractor.

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

9. The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall within one month from the stipulated date of start of the work, sign the contract consisting of:-

(i) The notice inviting tender, all the documents including drawings if any, forms the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

(ii) Standard Form Consisting of followings

- (a) NIT, Work order
- (b) Item rate tender form & Contract for worker.
- (c) General Rules and Directions
- (d) Condition of contracts
- (e) Clauses of contracts
- (f) Safety code
- (g) Model rules for the protection of health, sanitary arrangements for workers employed by IISER or its Contractors.
- (h) Contractors labour regulations
- (i) Proforma of agreement
- (j) Proforma of Schedule A to C
- (k) Special Condition of contracts
- (l) Technical specifications
- (m) Tender drawings
- (n) Priced Schedule of quantities.
- (o) All correspondence between the parties till award of contract

(iii) Till such time contract agreement is signed between the parties, all the documents mentioned Sr. 9 (i), 9 (ii)- (a to o) above shall be binding on the contractor.

(iv) No payment for the work done will be made unless contract is signed by the contractor.

(iii) CLAUSES OF CONTRACT

CLAUSE – I

Performance Guarantee

(i) The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'C' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'C' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Deposit at call receipt of any Schedule Bank/Banker's Cheque of any Schedule Bank/Demand Draft of any Scheduled Bank/Pay Order of any Scheduled Bank or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the IISER PUNE as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the IISER PUNE to make good the deficit.

(ii) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work. After recording of the completion certificate for the work by the competent authority, the Performance Guarantee shall be returned to the contractor, without any interest. However, in case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

(iii) The Engineer-in-Charge shall not make a claim under the Performance Guarantee except for amounts to which the Director IISER PUNE is entitled under the contract (not withstanding and / or without prejudice to any other provisions in the contract agreement) in the event of:-

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.

(b) Failure by the contractor to pay Director IISER PUNE any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions

of the agreement, within 30 days of the serving of notice to this effect by Engineer-in-Charge.

(iv) In the event of the contract being determined or rescinded under provision of any of the Clause / Condition of the agreement, the Performance Guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Director IISER PUNE.

CLAUSE – I A

Recovery of Security Deposit:-

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Government at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 2.5% of the gross amount of each running and final bill till the sum deducted will amount to security deposit of 2.5% of the tendered value of the work. Such deductions will be made and held by Government by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the security deposit and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit

All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from, or from any sums which may be due to or may become due to the contractor by IISER PUNE on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks or Government Securities (if deposited for more than 12 months) endorsed in favor of the Director IISER PUNE, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof.

The security deposit as deducted above can be released against bank guarantee issued by a Scheduled Bank, on its accumulations to a minimum of Rs.5 lakh subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs.5 lakh. Provided further that the validity of bank guarantee shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

In case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

Note – 1: Government papers tendered as security will be taken at 5% (five percent) below its market price or at its face value, whichever is less. The market price of Government paper would be ascertained by the Director IISER PUNE at the time of collection of interest and the amount of interest to the extent of deficiency in value of the Government paper will be withheld if necessary.

Note – 2: Government Securities will include all forms of Securities mentioned in Rule No. 274 of the G.F Rules except fidelity bond. This will be subject to the observance of the condition mentioned under the rule against each form of security.

Note – 3: Note 1 & 2 above shall be applicable for both clause 1 and 1A.

CLAUSE -2 - Compensation for Delay:-

If the contractor fails to maintain the required progress in terms of clause 5 or to complete the work and clear the site on or before the contract or justified extended date of completion as per clause 5 (excluding any extension under Clause 5.5) as well as any extension granted under Clause 12 and 15, he shall, without prejudice to any other right or remedy available under the law to the IISER PUNE on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in schedule 'C' (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause 5 or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified.

(i)	Compensation for Delay of work	@1.0% per month of delay to be computed on per day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10 % of the Tendered Value of work or of the Tendered Value of the Sectional part of work as mentioned in Schedule C for which a separate period of completion is originally given.

In case no compensation has been decided by the authority in Schedule C during the progress of work, this shall be no waiver of right to levy compensation by the said authority if the work remains incomplete on final justified extended date of completion. If the Engineer in Charge decides to give further extension of time allowing performance of work beyond the justified extended date, the contractor shall be liable to pay compensation for such extended period. If any variation in amount of contract takes place during such extended period beyond justified extended date and the contractor becomes entitled to additional time under clause 12, the net period for such variation shall be accounted for while deciding the period for levy of compensation. However, during such further extended period beyond the justified extended

period, if any delay occurs by events under sub clause 5.2, the contractor shall be liable to pay compensation for such delay.

Provided that compensation during the progress of work before the justified extended date of completion for delay under this clause shall be for non-achievement of sectional completion or part handing over of work on stipulated/justified extended date for such part work or if delay affects any other works/services. This is without prejudice to right of action by the Engineer in Charge under clause 3 for delay in performance and claim of compensation under that clause.

In case action under clause 2 has not been finalized and the work has been determined under clause 3, the right of action under this clause shall remain post determination of contract but levy of compensation shall be for days the progress is behind the schedule on date of determination, as assessed by the authority in Schedule C, after due consideration of justified extension. The compensation for delay, if not decided before the determination of contract, shall be decided after of determination of contract.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in schedule C, or the re-scheduled milestone(s) in terms of Clause 5.4, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied as above. With-holding of this amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However, no interest, whatsoever, shall be payable on such withheld amount.

CLAUSE– 2A - Incentive for Early Completion:-

In case, the contractor completes the work ahead of stipulated date of completion or justified extended date of completion as determined under clauses 5.3, 12 & 15, a bonus @ 1% (one per cent) of the tendered value per month computed on per day basis, shall be payable to the contractor, subject to a maximum limit of 5% (five per cent) of the tendered value. Provided that justified time for extra work shall be calculated on pro-rata basis as cost of extra work X stipulated period /tendered value. The amount of bonus, if payable, shall be paid along with final bill after completion of work. Provided always that provision of the Clause 2A shall be applicable only when so provided in 'Schedule C'.

CLAUSE– 3 - When Contract can be Determined:-

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

i). If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed

in an inefficient or otherwise improper or workman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

ii). If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.

iii). If the contractor fails to complete the work or section of work with individual date of completion on or before the stipulated or justified extended date, on or before such date of completion; and the Engineer in Charge without any prejudice to any other right or remedy under any other provision in the contract has given further reasonable time in a notice given in writing in that behalf as either mutually agreed or in absence of such mutual agreement by his own assessment making such time essence of contract and in the opinion of Engineer-in-Charge the contractor will be unable to complete the same or does not complete the same within the period specified.

iv). If the contractor persistently neglects to carry out his obligations under the contract and / or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.

v). If the contractor shall offer or give or agree to give to any person in IISER PUNE service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for IISER PUNE.

vi). If the contractor shall enter into a contract with IISER PUNE in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.

vii) If the contractor had secured the contract with IISER PUNE as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.

viii) If the contractor being an individual or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceeding for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or compositions or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

ix) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle to make the court to make winding up order.

x) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

xi) If the contractor assigns (excluding part(s) of work assigned to other agency(s) by the contractor as per terms of contract), transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer -in-Charge. When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the President of India shall have powers:

(a) To determine the contract as aforesaid so far as performance of work by the Contractor is concerned (of which determination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, the Earnest Money Deposit, Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government

(b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work. In the event of above courses being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

CLAUSE–3A

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract by giving notice to the other party stating the reasons. In

such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits:

(i) If the Tendered value of work is up to Rs. 45 lac: 15 days.

(ii) If the Tendered value of work is more than 45 lac and up to Rs. 2.5 Crore: 21 days.

(iii) If the Tendered value of work exceeds Rs. 2.5 Crore: 30 days.

Neither party shall claim any compensation for such eventuality. This clause is not applicable for any breach of the contract by either party.

CLAUSE– 4

Contractor liable to pay compensation even if action not taken under clause 3:-

In any case in which any of the powers conferred upon the Engineer-in-Charge by Clause–3 thereof, shall have become exercisable and the same are not exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

CLAUSE– 5

Time and Extension for Delay:-

The time allowed for execution of the Works as specified in the Schedule 'C' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in schedule 'C' or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely.

5.1 As soon as possible after the Contract is concluded, the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in Schedule 'C'.

(a) Project Management shall be done by using project management software for works costing more than Rs. 5 Crore.

(b) The project management shall be done using M.S. Project software for works costing more than Rs. 5 Crore and up to Rs. 20 Crore.

For works costing more than Rs. 20 Crore, project management shall be done using

Primavera Software.

PROGRAMME CHART

(i) The Contractor shall prepare an integrated programme chart in MS Project/Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the programme within the stipulated period or earlier and submit the same for approval to the Engineer-in- Charge within ten days of award of the contract. A recovery of Rs. 2500/- (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the above programme.

(ii) The programme chart should include the following:

(a) Descriptive note explaining sequence of the various activities.

(b) Network (PERT / CPM / BAR CHART).

(c) Programme for procurement of materials by the contractor.

Programme of procurement of machinery / equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition to above, to achieve the progress of Work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and R.C.C. works etc. for three floors within one month from the date of start of work till the completion of RCC work as per requirement of work. The contractor shall submit shuttering schedule adequate to complete structure work within laid down physical milestone.

(iii) If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved programme referred above or after rescheduling of milestones, the contractor shall produce a revised programme within 7 (seven) days, showing the modifications to the approved programme to ensure timely completion of the work. The modified schedule of programme

shall be approved by the Engineer in Charge. A recovery of Rs. 2500/- (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the modified programme.

(iv) The submission for approval by the Engineer-in-Charge of such programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

v) The contractor shall submit the progress report using MS Project/Primavira software with base line programme referred above for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 2500/ - (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs. 20 Crores) shall be made on per day basis in case of delay in submission of the monthly progress report.

5.2 If the work(s) be delayed by:-

(i) Force majeure, or

(ii) Abnormally bad weather, or

(iii) Serious loss or damage by fire, or

(iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or

(v) delay on the part of other contractors or tradesmen engaged by Engineer-in- Charge in executing work not forming part of the Contract, or

(vi) Non-availability of stores, which are the responsibility of Government to supply or

(vii) Non-availability or break down of tools and Plant to be supplied or supplied by Government or

(viii) Any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the Contractor's control.

then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the authority as indicated in Schedule 'F' but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works

5.3 Request for rescheduling of Mile stones or extension of time, to be eligible for

consideration, shall be made by the Contractor (as per Appendix XVI) in writing with supporting documents within fourteen days of the happening of the event causing delay on the prescribed forms to the Authority as Indicated in Schedule C.

5.3.1 In any such case the authority as indicated in Schedule 'C' may give a fair and reasonable extension of time for completion of work or reschedule the mile stones. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'C' in writing, within 30 days of the date of receipt of such request with all supporting documents respectively failing which it will be deemed that rescheduling of milestones have been approved. Non application by the

contractor for extension of time/rescheduling of the milestones shall not be a bar for giving a fair and reasonable extension/rescheduling of mile stones by the authority as indicated in Schedule C and this will be binding on the contractor.

CLAUSE– 6

Measurements of Work Done:-

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement, the value in accordance with the contract of work done.

All measurement of all items having financial value shall be entered in Measurement Book and/ or level field book so that a complete record is obtained of all works performed under the contract.

All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the contractor or his authorized representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance. If the contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

If for any reason the contractor or his authorized representative is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the IISER PUNE shall not entertain any claim from contractor for any loss or damages on this account. If the contractor or his authorized representative does not remain present at the time of such measurements after the contractor or his authorized representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to be accepted by the Contractor.

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

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available, then a mutually agreed method shall be followed.

The contractor shall give, not less than seven days notice to the Engineer-in-Charge or his authorized representative in charge of the work, before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the IISER PUNE to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

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

CLAUSE– 6A

Computerized Measurement Book:-

Engineer-in-Charge shall, except as otherwise provided, ascertain and determine by measurement the value of work done in accordance with the contract.

All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per format of the IISER PUNE so that a complete record is obtained of all the items of works performed under the contract.

All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the Engineer-in-Charge or his authorized representative as per interval or program fixed in consultation with Engineer-in-Charge or his representative. After the necessary corrections made by the Engineer-in-Charge, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to the Engineer-in-Charge for the dated signatures by the Engineer-in-Charge and the contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the contractor would initially submit draft computerized measurement sheets and these measurements would be got checked / test checked from the Engineer-in-Charge and / or his authorized representative. The contractor will, thereafter, incorporate such changes as may be done during these checks / test checks in his draft computerized measurements, and submit to the IISER PUNE a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and / or his authorized representative would thereafter checks this MB, and record the necessary certificates for their checks / test checks.

The final, fair, computerized measurement book given by the contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error is noticed, the contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound, after getting the earlier MB cancelled by the IISER PUNE. Thereafter, the MB shall be taken in the IISER PUNE Office records, and allotted a number as per the Register of Computerized MB's. This should be done before the corresponding bill is submitted to the IISER PUNE Office for payment. The contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers of the IISER PUNE.

The contractor shall also submit to the IISER PUNE separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the "bill. Thereafter, this bill will be processed by the IISER PUNE Office and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements.

The contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for checking of measurements / levels by the Engineer-in-Charge or his representative.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

The contractor shall give, not less than seven days' notice to the Engineer-in-Charge or his authorized representative in charge of the work, before covering up or otherwise placing beyond the reach of checking and/or test checking the measurement of any work in order that the same may be checked and/or test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of checking and/or test checking measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorized representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or

placed beyond the reach of checking and/or test checking measurements without such notice having been given or the Engineer-in-Charge's consent being obtained in writing, the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer-in-Charge or his authorized representative may cause either themselves or through another officer of the IISER PUNE to check the measurements recorded by contractor and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

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

CLAUSE– 7 - Payment on Intermediate Certificate to be Regarded as Advances: -

No payment shall be made for work, estimated to cost Rs. One lac or less till after the whole of the work shall have been completed and certificate of completion given. For works estimated to cost over Rs. One lac, the interim or running account bills shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the IISER PUNE in triplicate on or before the date of every month fixed for the same by the Engineer-in-Charge. The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'C', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved. Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, where necessary, the requisite measurements of the work.

In the event of the failure of the contractor to submit the bills, no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be made by the Engineer-in-Charge certifying the sum to which the contractor is considered entitled by way of interim payment at such rates as decided by the Engineer-in-Charge. The amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to the Engineer-in-Charge or his Project Management Consultant (PMC)/IISER Engineers together with the account of the material issued by the IISER PUNE, or dismantled materials, if any. In the case of works outside the headquarters of the Engineer- in-Charge, the period of ten working days will be extended to fifteen working days. In case of delay in payment of intermediate bills after 45 days of submission of bill by the contractor provided the bill submitted by the contractor found to be in order, a simple interest @ 10% per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis.

All such interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled

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

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

The Engineer-in-Charge in his sole discretion on the basis of a certificate from the IISER PUNE/PMC Engineer to the effect that the work has been completed up to the level in question make interim advance payments without detailed measurements for work done (other than foundations, items to be covered under finishing items) up to lintel level (including sunshade etc.) and slab level, for each floor working out at 75% of the assessed value. The advance payments so allowed shall be adjusted in the subsequent interim bill to be submitted by the contractor within 10 days of the interim payment. In case of delay in submission of bill by the contractor a simple interest @ 10% per annum shall be paid to the IISER PUNE from the date of expiry of prescribed time limit which will be compounded on yearly basis.

In case of composite contract if main contractor fails to make the payment to the contractor associated by him within 15 days of receipt of each running account payment, then on the written complaint of contractor associated for such work , Engineer in charge of work shall serve the show cause to the main contractor and if reply of main contractor either not received or found unsatisfactory, Engineer in charge may make the payment directly to the contractor associated for such work as per term & condition of the agreement drawn between main contractor & associate contractor fixed by main contractor. Such payment made to associated contractor shall be recovered by Engineer-in-charge of work from the next R/A bill due to main contractor as the case may be.

CLAUSE– 8 - Completion Certificate and Completion Plans :-

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or(b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/ their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may

have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning of dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding surplus materials and rubbish etc. and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

CLAUSE- 8A

Contractor to Keep Site Clean :-

When the annual repairs and maintenance of works are carried out, the splashes and droppings from white washing, colour washing, painting etc., on walls, floor, windows etc shall be removed and the surface cleaned simultaneously with the completion of these items of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all the other items of work in the contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either departmentally or through any other agency. Before taking such action, the Engineer-in-Charge shall give ten days notice in writing to the contractor.

CLAUSE- 8B - Completion Plans (as built drawing) to be Submitted by the Contractor :-

The contractor shall submit completion plan as required vide General Specifications for Electrical works (Part-I Internal) 2005 and (Part-II External)1994 as applicable within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum of 0.1 % of Tendered Value or limit prescribed in Schedule C whichever is more as may be fixed by the Engineer in charge and in this respect the decision of the Engineer in charge shall be final and binding on the contractor.

The contractor shall submit completion plans for Internal and External Civil, Electrical and Mechanical Services within thirty days of the completion of the work, provided that the service plans having been issued for execution by the Engineer-in-Charge, unless the contractor, by virtue of any other provision in the contract, is required to prepare such plans.

CLAUSE- 9

Payment of Final Bill :-

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect

of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized IISER Engineer/Representative, complete with account of materials issued by the IISER PUNE and dismantled materials.

(i) If the Tendered value of work is up to Rs. 45 lac : 2 months

(ii) If the Tendered value of work is more than 45 Lac and up to Rs. 2.5 Crore : 3 months

(iii) If the Tendered value of work exceeds Rs. 2.5 Crore : 6 months

In case of delay in payment of final bills after prescribed time limit, a simple interest @ 10% per annum shall be paid to the contractor from the date of expiry of prescribed time limit which will be compounded on yearly basis, provided the final bill submitted by the contractor found to be in order.

CLAUSE- 9A - Payment of Contractor's Bills to Banks :-

Payments due to the contractor may, if so desired by him, be made to his bank, registered financial, co-operative or thrift societies or recognized financial institutions instead of direct to him provided that the contractor furnishes to the Engineer-in-Charge (1) an authorization in the form of a legally valid document such as a power of attorney conferring authority on the bank, registered financial, co-operative or thrift societies or recognized financial institutions to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by IISER PUNE or his signatures on the bill or other claim preferred against IISER PUNE before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial, co-operative or thrift societies or recognized financial institutions. While the receipt is given by such banks; registered financial, co-operative or thrift societies or recognized financial institutions shall constitute a full and sufficient discharge for the payment, the contractor shall wherever possible present his bills duly receipted and discharged through his bank, registered financial, co-operative or thrift societies or recognized financial institutions.

Nothing herein contained shall operate to create in favour of the bank; registered financial, co-operative or thrift societies or recognized financial institutions any rights or equities vis-à-vis the Director IISER PUNE.

CLAUSE- 10 - Materials to be Provided by the Contractor :-

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the IISER PUNE.

The contractor shall, at his own expense and without delay; supply to the Engineer-in-Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge shall within thirty days of supply of samples or within such further period as he may require intimate to the contractor in writing whether samples are approved by him or not. If samples are not approved, the contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specification, approval of the Engineer-in-Charge shall be issued after the test results are received.

The contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places 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 and every assistance in obtaining the right to such access.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full powers to require other proper materials to be substitute thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the contractor.

The contractor shall at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped with the all necessary testing equipment as specified in schedule "C".

CLAUSE- 10 A - Secured Advance on Non-Perishable Materials: -

The contractor, on signing an indenture in the form in **Annexure XVIII** by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 75% of the assessed value of any materials which are in the opinion of the Engineer-in- Charge non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer-in-Charge provided the contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer-in-Charge shall be final and binding on the contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

CLAUSE-10B - Mobilization Advances :-

(i) Mobilization Advance not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such advance shall be paid in two or more installments to be determined by the Engineer-in-Charge at his sole discretion. The first installment of such advance shall be released by the Engineer-in-Charge to the contractor on a request made by the contractor to the Engineer-in-Charge in this behalf. The second and subsequent installments shall be released by the Engineer-in-Charge only after the contractor furnishes a proof of the satisfactory utilization of the earlier installment to the entire satisfaction of the Engineer-in-Charge.

Before any installment of advance is released, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount equal to 110% of the amount of advance and valid for the contract period. This (Bank Guarantee from Scheduled Bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

Provided always that provision of Clause 10 B shall be applicable only when so provided in 'Schedule C'.

Plant Machinery & Shuttering Material Advance:-

(ii) An advance for plant, machinery & shuttering material required for the work and brought to site by the Contractor may be given if requested by the contractor in writing within one month of bringing such plant and machinery to site. Such advance shall be

given on such plant and machinery, which in the opinion of the Engineer-in-Charge will add to the expeditious execution of work and improve the quality of work. In the case of new plant and equipment to be purchased for the work, the advance shall be restricted to 90% of the price of such new plant and equipment paid by the contractor for which the contractor shall produce evidence, satisfactory to the Engineer-in-Charge. In the case of second hand and used plants and equipment, the amount of such advance shall be limited to 50% of the depreciated value of plant and equipment as may be decided by the Engineer-in-Charge. The contractor shall, if so required by the Engineer-in-Charge, submit the statement of value of such old plant and equipment duly approved by a Registered Valuer recognized by the Central Board of Direct Taxes under the Income-Tax Act, 1961. No such advance shall be paid on any plant and equipment of perishable nature and on any plant and equipment of a value less than Rs. 50,000/- Seventy five per cent of such amounts of advance shall be paid after the plant and equipment is brought to site and balance twenty five per cent on successfully commissioning the same. However, total amount of advance for plant machinery and shuttering material shall be limited to 5% of the tendered value for the work.

Leasing of equipment shall be considered at par with purchase of equipment and shall be covered by tripartite agreement with the following:-

1. Leasing company which gives certificate of agreeing to lease equipment to the contractor.
2. Engineer-in-Charge, and
3. The contractor

This advance shall further be subject to the condition that such plant and equipment (a) are considered by the Engineer-in-Charge to be necessary for the works; (b) and are in working order and are maintained in working order; (c) hypothecated to the IISER PUNE as specified by the Engineer-in-Charge before the payment of advance is released. The contractor shall not be permitted to remove from the site such hypothecated plant and equipment without the prior written permission of the Engineer-in-Charge. The contractor shall be responsible for maintaining such plant and equipment in good working order during the entire period of hypothecation failing which such advance shall be entirely recovered in lump sum. For this purpose, steel scaffolding and form work shall be treated as plant and equipment.

The contractor shall insure the plant and machinery for which mobilization advance is sought and given, for a sum sufficient to provide for their replacement at site. Any amounts not recovered from the insurer will be borne by the contractor.

Interest and Recovery:-

(iii)The mobilization advance and plant and machinery advance in (i) & (ii) above bear simple interest at the rate of 10 per cent per annum and shall be calculated from the date of payment

to the date of recovery, both days inclusive, on the outstanding amount of advance. Recovery of such sums advanced shall be made by the deduction from the contractors bills commencing after first ten per cent of the gross value of the work is executed and paid, on pro-rata percentage basis to the gross value of the work billed beyond 10% in such a way that the entire advance is recovered by the time eighty per cent of the gross value of the contract is executed and paid, together with interest due on the entire outstanding amount up to the date of recovery of the installment.

(iv) If the circumstances are considered reasonable by the Engineer-in-charge, the period Mentioned in (ii) and (iii) for request by the contractor in writing for grant of mobilization advance and plant and equipment advance may be extended in the discretion of Engineer-in-charge.

CLAUSE10-C - Payment on Account of Increase in Prices / Wages due to Statutory Order(s) :-

If after submission of the tender, if the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 thereof) and/or wages of labour increases as a direct result of the coming into force of any fresh law, or statutory rule or order (but not due to any variation of rates in GST applicable on such material(s) being considered under this clause) beyond the prices/wages prevailing at the time of the last stipulated date of receipt of tenders including extensions, if any, for the work during contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, then the amount of the contract shall accordingly be varied.

If after submission of the tender, the price of any material incorporated in the works (excluding the materials covered under Clause 10CA and not being a material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 thereof) and/or wages of labour as prevailing at the time of last stipulated date of receipt of tender including extensions, if any, is decreased as a direct result of the coming into force of any fresh law or statutory rules or order (but not due to any changes of rate in sales tax/VAT, Central/State Excise/Custom Duty), Government shall in respect of materials incorporated in the works (excluding the materials covered under Clause 10CA and not being material supplied from the Engineer-in-Charge's stores in accordance with Clause 10 hereof) and/or labour engaged on the execution of the work after the date of coming into force of such law statutory rule or order be entitled to deduct from the dues of the contractor, such amount as shall be equivalent to the difference between the prices of the materials and/or wages as prevailed at the time of the last stipulated date for receipt of tenders including extensions if any for the work and the prices of materials and/or wages of labour on the coming into force of such law, statutory rule or order. This will be applicable for the contract period including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2.

Engineer-in-Charge shall call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of materials and wages.

The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such materials and/or wages of labour, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating

thereto which he may be in position to supply.

For this purpose, the labour component of 85% of the value of the work executed during period under consideration shall not exceed the percentage as specified in Schedule C, and the increase/decrease in labour shall be considered on the minimum daily wages in rupees of any unskilled mazdoor, fixed under any law, statutory rule or order.

CLAUSE– 10-CA

Payment due to Variation in Prices of Materials after receipt of tender:-

If after submission of the tender, the price of materials specified in Schedule C increases/decreases beyond the base price(s) as indicated in Schedule C for the work, then the amount of the contract shall accordingly be varied and provided further that any such variations shall be effected for stipulated period of Contract including the justified period extended under the provisions of Clause 5 of the Contract without any action under Clause 2.

However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of updated stipulated date of completion considering the effect of extra work (to be calculated on pro-rata basis as cost of extra work x stipulated period/tendered cost).

The increase/decrease in prices of cement, steel reinforcement and structural steel shall be determined by the Price indices issued by the Director General, CPWD. For other items provided in the Schedule 'C', this shall be determined by the All India Wholesale Price Indices of materials as published by Economic Advisor to Government of India, Ministry of Commerce and Industry. Base price for cement, steel reinforcement and structural steel shall be as issued under the authority of Director General CPWD applicable for Delhi including Noida, Gurgaon, Faridabad & Ghaziabad and for other places as issued under the authority of Zonal Chief Engineer, CPWD and base price of other materials issued by concerned Zonal chief Engineer and as indicated in Schedule 'C'. In case, price index of a particular material is not issued by Ministry of Commerce and Industry, then the price index of nearest similar material as indicated in Schedule 'C' shall be followed.

The amount of the contract shall accordingly be varied for all such materials and will be worked out as per the formula given below for individual material:

Adjustment for component of individual material

$$V = P \times Q \times \frac{CI - CIo}{CIo}$$

Where

V = Variation in material cost i.e. increase or decrease in the amount of rupees to be paid

P = Base Price of material as issued under authority of DG, CPWD or concerned Zonal Chief Engineer and as indicated in Schedule "F".

For Projects and Original Works

Q = Quantity of material brought at site for bonafide use in the works since previous bill excluding any such quantity consumed in the deviated quantity of items beyond deviation limit and extra /substituted item, paid/to be paid at rates derived on the basis of market rate under clause 12.2.

For Maintenance Works

Q = Quantity of material brought at site for bonafide use in the works since previous bill including any such quantity consumed in the deviated quantity of items beyond deviation limit paid at agreement rate and extra /substituted item being scheduled items, but excluding non-schedule extra /substituted item paid/to be paid at market rate under clause 12.2.

Note:

(i) The date wise record of ready mix concrete shall be kept in a register and the cement consumption for the same shall be calculated accordingly.

(ii) If built-up steel items are brought at site from workshop, then the variation shall be paid for the structural steel up to the period when the built up item/finished product is brought at site.

Clo = Price index for cement, steel reinforcement bars and structural steel as issued by the

DG, CPWD and corresponding to the time of base price of respective material indicated in Schedule 'C'. For other items, if any, provided in Schedule 'C', All India Wholesale Price Index for the material as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce and corresponding to the time of base price of respective material indicated in Schedule 'C'.

Cl = Price index for cement, steel reinforcement bars and structural steel as issued under the authority of DG, CPWD for period under consideration. For other items, if any, provided in Schedule 'C', All India Wholesale Price Index for the material for period under consideration as published by Economic Advisor to Government of India, Ministry of Industry and Commerce.

Note: (i) In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.

Provided always that provisions of the preceding Clause 10 C shall not be applicable in respect of Materials covered in this Clause

(ii) If during progress of work or at the time of completion of work, it is noticed that any material brought at site is in excess of requirement, then amount of escalation if paid earlier on such excess quantity of material shall be recovered on the basis of cost indices as applied at the time of payment of escalation or as prevailing at the time of effecting recovery, whichever is higher.

(iii) Cement mentioned wherever in this clause includes Cement component used in RMC brought at site from outside approved RMC plants, if any

CLAUSE– 10 CC

Payment due to Increase / Decrease in Prices / Wages after Receipt of Tender for Works

If the prices of materials (not being materials supplied or services rendered at fixed prices by the department in accordance with clause 10 & 34 thereof) and/or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contract shall accordingly be varied, subject to the condition that that such compensation for escalation in prices and wages shall be available only for the work done during the stipulated period of the contract including the justified period extended under the provisions of clause 5 of the contract without any action under clause 2. No such compensation shall be payable for a work for which the stipulated period of completion is equal to or less than the time as specified in Schedule F. Such compensation for escalation in the prices of materials and labour, when due, shall be worked out based on the following provisions:-

(i) The base date for working out such escalation shall be the last stipulated date of receipt of tenders including extensions, if any.
The cost of work on which escalation will be payable shall be reckoned as below:-

(a)	**Gross value of work done up to this quarter**	**:**	**(A)**
(b)	**Gross value of work done up to the last quarter**	**:**	**(B)**
(c)	**Gross value of work done since previous quarter(A-B)**	**:**	**(C)**
(d)	**Full assessed value of Secured Advance (excluding materials Covered under Clause 10 CA) fresh paid in this quarter:**		**(D)**
(e)	**Full assessed value of Secured Advance (excluding materials Covered under Clause 10 CA) recovered in this quarter:**		**(E)**
(f)	**Full assessed value of Secured Advance for which escalation is payable In this quarter (D-E)**	**:**	**(F)**
(g)	**Advance payment made during this quarter**	**:**	**(G)**
(h)	**Advance payment recovered during this quarter**	**:**	**(H)**
(i)	**Advance payment for which escalation is payable in this quarter (G-H)**		**(I)**
(j)	**Extra items/deviated quantities of items paid as per Clause 12 based of prevailing market rates during this quarter**	**:**	**(J)**

Then, M = C + F+ I - J

W= 0.85 M

(iii) Components for materials (except cement, reinforcement bars, structural steel or other materials covered under clause 10 CA) labour, P.O.L., etc. shall be pre-determined for every work and incorporated in the conditions of contract attached to the tender papers included in Schedule 'C'. The decision of the Engineer-in-Charge in working out such percentage shall be

binding on the contractors.

(iv) The compensation for escalation for other materials (excluding cement, reinforcement bars, structural steel or other materials covered under clause 10 CA) and P.O.L. shall be worked as per the formula given below:

(a) Adjustment for civil component (except cement, structural steel, reinforcement bars and other materials covered under clause 10CA) / electrical component of construction '

$$Vm = W \times \frac{Xm}{100} \times \frac{MI - MIo}{MIo}$$

Vm = Variation in material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of work done worked out as indicated in sub-para (ii) of Clause 10CC.

Xm = Component of 'materials' (except cement, structural steel, reinforcement bars and other materials covered under clause10CA) expressed as percent of the total value of work.

MI = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index for Individual Commodities/ Group Items for the period under consideration as published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce and applying weightages to the Individual Commodities/Group Items. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.)

MIo = All India Wholesale Price Index for civil component/electrical component* of construction material as worked out on the basis of All India Wholesale Price Index for Individual Commodities/Group Items valid on the last stipulated date of receipt of tender including extension, if any, as published by the Economic Advisor to Govt. of India, Ministry of Industry & Commerce and applying weightages to the Individual Commodities/Group items.

*Note: relevant component only will be applicable.

(b) Adjustment for component of 'POL'

$$Vf = W \times \frac{Z}{100} \times \frac{FI - FIo}{FIo}$$

Vf = Variation in cost of Fuel, Oil & Lubricant i.e. increase or decrease in the amount in rupees to be paid or recovered.

W = Cost of Work done worked out as indicated in sub-para (ii) of Clause 10CC.

Z = Component of Fuel, Oil & Lubricant expressed as percent of the total value of work.

FI = All India Wholesale Price Index for Fuel, Oil & Lubricant for the period under consideration as published by Economic Advisor to Govt. of India, Ministry of Industry & Commerce, New Delhi. (In respect of the justified period extended under the provisions of clause 5 of the contract without any action under clause 2, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.)

FIo = All India Wholesale Price Index for Fuel, Oil & Lubricant valid on the last stipulated date of receipt of tender including extension, if any.

(v) The following principles shall be followed while working out the indices mentioned in para (IV) above.

(a) The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills paid during the three calendar months of the said quarter. The dates of preparation of bills as finally entered in the Measurement Book by the Assistant Engineer/ date of submission of bill finally by the contractor to the department in case of computerized measurement books shall be the guiding factor to decide the bills relevant to the quarterly interval. The first such payment shall be made at the end of three months after the month (excluding the month in which tender was accepted) and thereafter at three months' interval. At the time of completion of the work, the last period for payment might become less than 3 months, depending on the actual date of completion.

(b) The index (MI/FI etc.) relevant to any quarter/period for which such compensation is paid shall be the arithmetical average of the indices relevant to the three calendar months. If the period up to date of completion after the quarter covered by the last such installment of payment, is less than three months, the index Ml and Fl shall be the average of the indices for the months falling within that period.

(vi) The compensation for escalation for labour shall be worked out as per the formula given below:

$$VL = W \times \frac{Y}{100} \times \frac{LI - LIo}{LIo}$$

VL= Variation in labour cost i.e. amount of increase or decrease in rupees to be paid or recovered.

W= Value of work done, worked out as indicated in sub-para (ii) above.

Y= Component of labour expressed as a percentage of the total value of the work.

LI= Minimum wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as applicable on the last date of the quarter previous to the one under consideration. (In respect of the justified period extended under the provisions of Clause 5 of the contract without any action under Clause 2, the minimum wage prevailing on the last date of quarter previous to the quarter pertaining to stipulated date of completion of the minimum wage prevailing on the last date of the quarter previous to the one under consideration, whichever is less, shall be considered.)

LIo= Minimum daily wage in rupees of an unskilled adult male mazdoor, fixed under any law, statutory rule or order as on the last stipulated date of receipt of tender including extension, if any.

(vii) The following principles will be followed while working out the compensation as per subpara (vi) above.

(a) The minimum wage of an unskilled mazdoor mentioned in sub-para (vi) above shall be the higher of the wage notified by Government of India, Ministry of Labour and that notified by the local administration both relevant to the place of work and the period of reckoning.

(b) The escalation for labour also shall be paid at the same quarterly intervals when escalation due to increase in cost of materials and/or P.O.L. is paid under this clause. If such revision of minimum wages takes place during any such quarterly intervals, the escalation compensation shall be payable at revised rates only for work done in subsequent quarters.

(c) Irrespective of variations in minimum wages of any category of labour, for the purpose of this clause, the variation in the rate for an unskilled mazdoor alone shall form the basis for working out the escalation compensation payable on the labour component.

(viii) In the event the price of materials and/or wages of labour required for execution of the work decrease/s, there shall be a downward adjustment of the cost of work so that such price of materials and/or wages of labour shall be deductible from the cost of work under this contract and in this regard the formula herein before stated under this Clause 10CC shall mutatis mutandis apply, provided that :

(a) no such adjustment for the decrease in the price of materials and/or wages of labour aforementioned would be made in case of contract in which the stipulated

period of completion of the work is equal to or less than the time as specified in Schedule 'C'.

(b) the Engineer-in-Charge shall otherwise be entitled to lay down the procedure by which the provision of this sub-clause shall be implemented from time to time and the decision of the Engineer-in-Charge in this behalf shall be final & binding on the contractor.

(ix) Provided always that:-

(a) Where provisions of clause 10CC are applicable, provisions of clause 10C will not be applicable but provisions of clause 10CA will be applicable.

(b) Where provisions of clause 10CC are not applicable, provisions of clause 10C and 10CA will become applicable.

CLAUSE- 10D

Dismantled material IISER-PUNE Property :-

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as IISER PUNE's property and such materials shall be disposed off to the best advantage of IISER PUNE according to the instructions in writing issued by the Engineer-in-Charge.

CLAUSE– 11

Work to be Executed in Accordance with Specifications, Drawings, Orders etc.:-

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department specified in Schedule `C' or in any Bureau of Indian Standard or any other, published Standard or Code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The contractor shall

take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

CLAUSE- 12 :

Deviations/Variations Extent and Pricing:-

The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out of the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

The completion cost of any agreement for Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration shall not exceed 1.25 times of Tendered amount.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows:

(i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus

(ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

Deviation, Extra Item and pricing

12.2

A. For Project and original works:

In the case of extra item(s) (items that are completely new, and are in addition to the Pricing items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis which shall include invoices, vouchers etc. and manufacturer's specifications, for the work failing which the rates approve approved later by the engineer-in-charge shall be binding and the Engineer in charge shall within prescribed time limit of the receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined, failing which it will be deemed to have been approved.

B. **For Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration:**

In the case of Extra Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount.

Payment of Extra items in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

12.3

Deviation, Substituted items, pricing

A. For Project and original works:

Substituted In the case of substituted items (items that are taken up with partial substitution or in lieu of Items, items of work in the contract), the rate for the agreement item (to be substituted) and Pricing substituted item shall also be determined in the manner as mentioned in the following para

a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

B. For Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration:

- In the case of Substitute Item(s) being the schedule items (Delhi Schedule of Rates items), these shall be paid as per the schedule rate plus cost index (at the time of tender) plus/minus percentage above/ below quoted contract amount. Payment of Substitute in case of non-schedule items (Non-DSR items) shall be made as per the prevailing market rate.

Deviation, Deviated quantities, pricing:
A. For Project and original works:

In the case of contract items, substituted items, contract cum substituted items, which Quantities, exceed the limits laid down in schedule C, the contractor may within fifteen days of

receipt of Pricing order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

B. For Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration:

In the case of contract items, which exceed the limits laid down in schedule C, the contractor shall be paid rates specified in the schedule of quantities.

The prescribed time limits for finalizing rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items is within 30 days after submission of the proposal by the contractor without observation of the Engineer in charge.

12.3 A. For Project and original works:

The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule C, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

B. For Maintenance works including works of up gradation, aesthetic, special repair, addition/ alteration:

In case of decrease in the rates prevailing in the market of items for the work in excess of the limits laid down in Schedule C, the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

12.4 The contractor shall send to the Engineer-in-Charge once every three months, an up to date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which

the contractor shall be deemed to have waived his right. However, the Director

IISER PUNE may authorize consideration of such claims on merits.

12.5 For the purpose of operation of Schedule C, the following works shall be treated as

Works relating to foundation:

(i) For buildings, compound walls, plinth level or 1.2 meters (4 feet) above ground level, whichever is lower excluding items of flooring and D.P.C. but including base concrete, below the floors.

(ii) For abutments, piers, retaining walls of culverts and bridges, walls of water reservoirs, the bed of floor level.

(iii) For retaining walls where floor level is not determinate, 1.2 meters above the average ground level or bed level.

(i) For the reservoirs/tank (other than overhead reservoir/tanks): All works up to 1.2 metres above the ground level.

(v) For Basement: All works up to 1.2m above ground level or up to floor 1 level whichever is lower.

(vi) For Roads, all items of excavation & filling treatment of sub – base.

12.6 Any operation incidental to or necessarily has to be in contemplation of tenderer while Filing, tender or necessary for proper execution of the item included in the Schedule of Quantities or in the Schedule of Rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said Schedule of Rates, as the case may be. Nothing extra shall be admissible for such operations.

CLAUSE- 13

Foreclosure of Contract due to Abandonment or Reduction in Scope of Work :-

If at any time after acceptance of the tender or during the progress of work, the purpose or object for which the work is being done changes due to any supervening cause and as a result of which the work has to be abandoned or reduced in scope the Engineer-in-Charge shall give notice in writing to that effect to the contractor stating the decision as well as the cause for such decision and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

The contractor shall be paid at contract rates. full amount for works executed at site and in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilised on the work to the full extent in view of the foreclosure:-

i). Any expenditure incurred on preliminary site work, e.g. temporary access roads, temporary labour huts, staff quarters and site office; storage accommodation and water storage tanks.

ii). IISER PUNE shall have the option to take over contractor's materials or any part thereof either brought to site or of which the contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work) provided, however IISER PUNE shall be bound to take over the materials or such portions thereof as the contractor does not desire to retain. For materials taken over or to be taken over by IISER PUNE, cost of such materials as detailed by Engineer-in-Charge shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the contractor.

iii). If any materials supplied by IISER PUNE are rendered surplus, the same except normal wastage shall be returned by the contractor to IISER PUNE at rates not exceeding those at which these were originally issued, less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the contractor. In addition, cost of transporting such materials from site to IISER PUNE stores, if so required by IISER PUNE, shall be paid.

iv). Reasonable compensation for transfer of Tools & Plants from site to contractor's permanent stores or to his other works, whichever is less. If Tools & Plants are not transported to either of the said places, no cost of transportation shall be payable.

(v). Reasonable compensation for repatriation of contractor's site staff and imported labour to the extent necessary.

The contractor shall, if required by the Engineer-in-Charge, furnish to him books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this conditions.

The reasonable amount of items on (i), (iv) and (v) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e. total stipulated cost of the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by the IISER PUNE as per item (ii) above. Provided always that against any payments due to the contractor on this account or otherwise, the Engineer-in-Charge shall be entitled to recover or be credited with any outstanding balance due from the contractor for advance paid in respect of any tool, plants and materials and any other sums which at the date of termination were recoverable by the IISER PUNE from the contractor under the terms of the contract.

In the event of action being taken under Clause 13 to reduce the scope of work, the contractor may furnish fresh Performance Guarantee on the same conditions, in the same manner and at the same rate for the balance tendered amount and initially valid up to the extended date of completion or stipulated date of completion if no extension has been granted plus 60 days

beyond that. Wherever such a fresh Performance Guarantee is furnished by the contractor the Engineer-in-Charge may return the previous Performance Guarantee.

CLAUSE- 14

Carrying out part work at risk & cost of contractor

If contractor:

(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or

(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or

Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

The Engineer-in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to IISER PUNE, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:

(a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or

(b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by IISER PUNE because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor. The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the

department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by IISER PUNE in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Government as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to IISER PUNE in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.

In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

CLAUSE- 15

Suspension of work

i). The contractor shall, on receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons:-

a) On account of any default on the part of the contractor or

b) for proper execution of the works or part thereof for reasons other than the default of the contractor, or

c) for safety of the works or part thereof

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer-in-Charge.

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

a). The contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part and :

b). If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as the Engineer-in-Charge may consider reasonable in respect of salaries and/ or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within fifteen days of the expiry of the period of 30 days.

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

CLAUSE 15 A

The contractor shall not be entitled to claim any compensation from Government for the loss suffered by him on account of delay by Government in the supply of materials in schedule 'B' where such delay is covered by the difficulties relating to the supply of wagons, force majeure or any reasonable cause beyond the control of the Government.

This clause 15 A will not be applicable for works where no material is stipulate

CLAUSE- 16

Action in case Work not done as per Specifications:-

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his authorized subordinates In charge of the work and all the superior officers, officer of the Quality Assurance Unit of the IISER PUNE or any organization engaged by the IISER PUNE for Quality Assurance and Chief Technical Examiner's Office of The Central Vigilance Commission of India, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

If it shall appear to the Engineer-in-Charge or his authorized subordinates In charge of the work or to the in charge of Quality Assurance or his subordinate officers or the officers of the organization engaged by the IISER PUNE for Quality Assurance or to the Chief Technical Examiner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality interior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months (six months in case of the work costing Rs.10 Lac and below except road work) of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under Clause 2 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority **specified in Schedule 'C'** may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/ or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE– 17

Contractor Liable for Damages, Defects during Maintenance Period:-

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or

cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever of if any defect, shrinkage or other faults appear in the work within twelve months (6 months in the case of any work costing Rs. 10,00,000/- and below except road work) after a certificate final or otherwise of its completion shall have been given by the Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workman and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of twelve months (six months in the case of work costing Rs. Ten lacs and below except road work) after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later. Provided that in the case of road work if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later.

In case of Maintenance and operation works of Electrical & Mechanical services, the security deposit deducted from contractors shall be refunded within one month from the date of final payment or within one month from the date of completion of the maintenance contract whichever is earlier.

CLAUSE- 18

Contractor to Supply Tools & Plants etc. :-

The contractor shall provide at his own cost all materials (except such special materials, if any, as may in accordance with the contract be supplied from the Engineer-in-Charge's stores), machinery, tools & plants as specified in Schedule' C' In addition to this, appliances, implements, other plants, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting, weighing and assisting the measurement for examination at any time and from time to time of the work or materials. Failing his so doing the same may be provided by the Engineer-in-Charge at the expense of the contractor and the expenses may be deducted, from any money due to the contractor, under this contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

CLAUSE- 18 A

Recovery of Compensation paid to Workmen :-

In every case in which by virtue of the provisions sub-section (1) of section 12, of the Workmen's Compensation Act, 1923, IISER PUNE is obliged to pay compensation to a workman employed by the contractor, in execution of the works, IISER PUNE will recover from the contractor, for the amount of the compensation so paid ; and, without prejudice to the rights of the IISER PUNE under sub-section (2) of Section 12, of the said Act, IISER PUNE shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by IISER PUNE to the contractor whether under this contract or otherwise. IISER PUNE shall not be bound to contest any claim made against it under Sub-Section (1) Section 12, of the said Act, except on the written request of the contractor and upon his giving to IISER PUNE full security for all costs for which IISER PUNE might become liable in consequence of contesting such claim.

CLAUSE- 18 B

Ensuring Payment and Amenities to Workers if Contractor fails :-

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, IISER PUNE is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the C.P.W.D. Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by IISER Contractors, IISER PUNE will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred, and without prejudice to the rights of the IISER PUNE under sub-Section (2) of Section 20, and sub-Section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, IISER PUNE shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by IISER PUNE to the contractor whether under this contract or otherwise IISER PUNE shall not be bound to contest any claim made against it under sub-Section (1) of Section 20, sub-Section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the IISER PUNE full security for all costs for which IISER PUNE might become liable in contesting such claim.

CLAUSE- 19

Labour Laws to be Complied by the Contractor :-

The contractor shall obtain a valid license under the Contract Labour (Regulation & Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition & Regulation) Act, 1986.

The contractor shall also comply with the provisions of the building & other Construction Workers (Regulation and Conditions of Services) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

CLAUSE- 19A

No labour below the age of fourteen years shall be employed on the work.

CLAUSE-19B

Payment of Wages :-

i). The contractor shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

ii). The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

iii). In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Central Public Works Department contractor's Labour Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorisedly made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971 wherever applicable.

iv). a). The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

b). Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.

In the case of Union Territory of Delhi, however, as the all inclusive minimum daily wages fixed under Notification of the Delhi Administration No.F.12 (162) MWO / DAB / 43884-91, dated 31-12-1979 as amended from time to time are

inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.

v). The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

vi). The contractor shall indemnify and keep indemnified Government against payments to be made under and for the observance of the laws aforesaid and the C.P.W.D. Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

vii). The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

viii). Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commissions or otherwise.

ix) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE 19C

In respect of all labour directly or indirectly employed in the work for the performance of the Contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per C.P.W.D. Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, he shall be liable to pay a penalty of Rs.200/- for each default and in addition, the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

CLAUSE 19D

The contractor shall submit by the 4th and 19th of every month, to the Engineer-in-Charge, a true statement showing in respect of the second half of the preceding month and the first half of the current month respectively.

(1) the number of labourers employed by him on the work,

(2) their working hours,

(3) the wages paid to them.

(4) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them, and

(5) the number of female workers who have been allowed maternity benefit according to Clause 19F and the amount paid to them.

Failing which the contractor shall be liable to pay to IISER PUNE, a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Engineer-in-Charge shall be final in deducting from any bill due to the contractor the amount levied as fine and be binding on the contractor.

CLAUSE 19 E

In respect of all labour directly or indirectly employed in the works for the performances of the contractor's part of this contract, the contractor shall comply with or cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for worker employed by Central Public Works Department and its contractors.

CLAUSE 19F

Leave and pay during leave shall be regulated as follows:

1**. Leave:**

(i) In the case of delivery- maternity leave not exceeding 8 weeks, 4 weeks up to and including the day of delivery and 4 weeks following that day.

(ii) In the case of miscarriage - up to 3 weeks from the date of miscarriage.

2. **Pay:**

(i) In the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined or at the rate of Rupee one only a day whichever is greater.

(ii) In the case of miscarriage- leave pay at the rate of average daily earnings calculated on the total wages earned on the days when full time wages was done during a period of three months immediately preceding the date of such miscarriage.

3. **Conditions for the grant of Maternity Leave**:

No maternity leave benefit shall be admissible to a woman unless she has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave.

4. The contractor shall maintain a register of Maternity (Benefit) in the Prescribed Form as shown in appendix – I and II, and the same shall be kept at the place of work.

CLAUSE 19 G

In the event of the contractor(s) committing a default or breach of any of the provisions of the Central Public Works Department, Contractor's Labour Regulations and Model Rules for the

protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filling any statement under the provisions of the above Regulations and Rules which is materially incorrect, he/ they shall, without prejudice to any other liability, pay to the IISER PUNE a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting, filling such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.200/- per day for each day of default subject to a maximum of 5 percent of the estimated cost of the work put to tender. The decision of the Engineer-in-Charge shall be final and binding on the parties.

Should it appear to the Engineer-in-Charge that the contractor(s) is/are not properly observing and complying with the provisions of the C.P.W.D. Contractor's Labour Regulations and Model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (R&A) Central Rules 1971, for the protection of health and sanitary arrangements for work-people employed by the contractor(s) (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the contractor(s) shall fail within the period specified in the notice to comply with and/ observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities herein before mentioned at the cost of the contractor(s). The contractor(s) shall erect, make and maintain at his/ their own expense and to approved standards all necessary huts and sanitary arrangements required for his/ their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be remodeled and/ or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

CLAUSE 19H

The contractor(s) shall at his/ their own cost provide his/ their labour with a sufficient number of huts (hereinafter referred to as the camp) of the following specifications on a suitable plot of land to be approved by the Engineer-in-Charge.

I) a) The minimum height of each hut at the eaves level shall be 2.10m (7ft.) and the floor area to be provided will be at the rate of 2.7 sq. m. (30 sq. ft.) for each member of the worker's family staying with the labourer.

b) The contractor(s) shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6' x 5') adjacent to the hut for each family.

c) The contractor(s) shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each one hundred of the total strength, separate latrines and urinals being provided for women.

d) The contractor(s) shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.

II) a) All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobri on both sides. The floor may be kutcha but plastered with mud gobri and shall be at least 15cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the contractor shall ensure that throughout the period of their occupation, the roofs remain water-tight.

b) The contractor(s) shall provide each hut with proper ventilation.

c) All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.

d) There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the availability of site with the approval of the Engineer-in-Charge. Back to back construction will be allowed.

III) **Water Supply** – The contractor(s) shall provide adequate supply of water for the use of labourers. The provisions shall not be less than two gallons of pure and wholesome water per head per day for drinking purpose and three gallons of clean water per head per day for bathing and washing purpose. Where piped water supply is available, supply shall be at stand posts and where the supply is from wells or river, tanks which may be of metal or masonry, shall be provided. The contractor(s) shall also at his/their own cost make arrangements for laying pipe lines for water supply to his/their labour camp from the existing mains wherever available, and shall pay all fees and charges therefore.

IV) The site selected for the camp shall be high ground, removed from jungle.

V) **Disposal of Excreta** – The contractor(s) shall make necessary arrangements for the disposal of excreta from the latrines by trenching or incineration which shall be according to the requirements laid down by the Local Health Authorities. If trenching or incineration is not allowed, the contractor(s) shall make arrangements for the removal of the excreta through the Municipal Committee/authority and inform it about the number of labourers employed so that arrangements may be made by such Committee/authority for the removal of the excreta. All charges on this account shall be borne by the contractor and paid direct by him to the Municipality/authority. The contractor shall provide one sweeper for every eight seats in case of dry system.

Vi) **Drainage** – The contractor(s) shall provide efficient arrangements for draining away Sullage water so as to keep the camp neat and tidy.

VII) The contractor(s) shall make necessary arrangements for keeping the camp area sufficiently lighted to avoid accidents to the workers.

VIII) **Sanitation** – The contractor(s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

CLAUSE 19 I

The Engineer-in-Charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractor's employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements.

CLAUSE 19 J

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

However, the Engineer-in-Charge, through a notice, may require the contractor to remove the illegal occupation any time on or before construction and delivery.

CLAUSE 19 K
Employment of Skilled / Semi Skilled Workers –

The contractor shall, at all stages of work, deploy skilled/semi skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute / Industrial Training Institute/National Institute of construction Management and Research (NICMAR) / National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/certified by State/Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/semi skilled workers required in such trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certified from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs.100 per such tradesmen per day. Decision of Engineer-in-Charge as to whether particular tradesmen possess requisite skill and amount of compensation in case of default shall be final and binding.
Provided always, that the provisions of this Clause shall not be applicable for works with estimated cost put to tender being less than Rs. 5 crores.

CLAUSE 19L

Registration with EPFO and ESIC

The ESI and EPF contributions on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of the employer paid by the contractor shall be reimbursed by the Engineer-in-charge to the contractor on actual basis.

CLAUSE 20:
Minimum Wages Act to be complied with:

The Contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation & Abolition) Act, 1970, amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.

CLAUSE 21:
Work not to be sublet. Action in case of insolvency -

The Contract shall not be assigned or sublet without the written approval of the Engineer-in-Charge. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or persons in the employ of IISER PUNE in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer-in-Charge on behalf of the Director IISER PUNE shall have power to adopt the courses specified in Clause 3 hereof in the interest of IISER PUNE and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

CLAUSE 22 :

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of IISER PUNE without reference to the actual loss or damage sustained and whether or not any damage shall have been sustained.

CLAUSE 23:
Changes in Firm's Constitution to be intimated -

Where the Contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern, such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the contractor. If previous approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of Clause 21 hereof and the same action may be taken, and the same consequences shall ensue as provided in the said Clause 21.

CLAUSE 24 :

All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Engineer-in-Charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on.

CLAUSE 25 :
Settlement of Disputes & Arbitration -

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

i)If either party considers any work demanded of or denied to it to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge or contractor on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, it shall promptly within 15 days request the Dispute Redressal Committee (DRC) IISER, PUNE shall give the opposing party two weeks for a written response and holding not more than three hearing gives its decisions within 60 days from the receipt of appeal from either party. The constitution of Dispute Redressal Committee (DRC) IISER, PUNE shall be as Indicated in Schedule "C". If the Dispute Redressal Committee (DRC) IISER, PUNE fails to give its decision within the aforesaid period or any party is dissatisfied with the decision of Dispute Redressal Committee (DRC) , the either party may within period of 30 days from the receipt of the decision of the Dispute Redressal Committee (DRC), give notice to the Chairman, Building and Works Committee, IISER, PUNE for appointment of arbitrator on prescribed proforma as per Appendix XV, failing which the said decision shall be final binding and conclusive and not referable to adjudication by the arbitrator. It is a term of contract that each party invoking arbitration must exhaust the aforesaid mechanism of settlement of claims/disputes prior to invoking arbitration. Provided that no party shall be represented before the Dispute Redressal Committee (DRC) by an advocate/legal counsel etc.

ii) Except where the decision has become final, binding and conclusive in terms of Sub Para (i) above, disputes or difference shall be referred for adjudication through arbitration by a sole arbitrator appointed by the Chairman, Building and Works Committee, IISER PUNE, If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever, another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chairman, Building and Works Committee, IISER PUNE of the appeal.

It is also a term of this contract that no person, other than a person appointed by such The Chairman, Building and Works Committee, IISER PUNE or, as aforesaid, should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.

It is also a term of this contract that if the contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 3 (three) years of receiving the

intimation from the Engineer-in-Charge that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the IISER PUNE shall be discharged and released of all liabilities under the contract in respect of these claims.

The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is also a term of this contract that the arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs.1, 00,000/- the arbitrator shall give reasons for the award.

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

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

CLAUSE 26
Contractor to Indemnify IISER PUNE against Patent Rights -

The Contractor shall fully indemnify and keep indemnified the Director IISER PUNE against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against IISER PUNE in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the Director IISER PUNE if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the Engineer-in-Charge in this behalf.

CLAUSE 27 :
Lump sum Provisions in Tender -

When the estimate on which a tender is made includes lump sum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and

conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

CLAUSE 28 :
Action Where no Specifications are Specified -

In case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standard Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per Manufacturer's Specifications, In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE 29 : With-Holding and Lien in Respect of Sums Due from Contractor:

(i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in-Charge or the IISER PUNE shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the IISER PUNE shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalisation or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the IISER PUNE shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of the IISER PUNE or any contracting person through the Engineer-in-Charge pending finalisation of adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or IISER PUNE will be kept withheld or retained as such by the Engineer-in-Charge or IISER PUNE till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the IISER PUNE shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/ limited company as the case may be, whether in his individual capacity or otherwise.

(ii) IISER PUNE shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract etc. to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund

the amount of over-payment and it shall be lawful for IISER PUNE to recover the same from him in the manner prescribed in sub-Clause (i) of this Clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by IISER PUNE to the contractor, without any interest thereon whatsoever.

Provided that the IISER PUNE shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Engineer-in-Charge or the Director IISER PUNE on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Engineer-in-Charge or the Director IISER PUNE.

CLAUSE 29A :
Lien in Respect of Claims in other Contracts

Any sum of money due and payable to the contractor (including security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the IISER PUNE or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or IISER PUNE or such other person or persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Engineer-in-Charge or the IISER PUNE or with such other person or persons.

It is an agreed term of the contract that the sum of money so withheld or retained under this Clause by the Engineer-in-Charge or the IISER PUNE will be kept withheld or retained as such by the Engineer-in-Charge or IISER PUNE or till his claim arising out of the same contract or any other contract is either mutually settled or determined by the Arbitration Clause or by the competent court, as the case may be and that the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this Clause and duly notified as such to the contractor.

CLAUSE 30 :
Unfiltered Water Supply

The Contractor(s) shall make his/ their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions.

i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge.

ii) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory.

CLAUSE 31
Departmental Water Supply, if Available

Water if available may be supplied to the contractor by the department subject to the following conditions:-

(i) The water charges @ 1% shall be recovered on gross amount of the work done.

(ii) The contractor(s) shall make his/their own arrangement of water connection and laying of pipelines from existing main of source of supply.

(iii) The Department do not guarantee to maintain uninterrupted supply of water and it will be incumbent on the contractor(s) to make alternative arrangements for water at his/ their own cost in the event of any temporary break down in the IISER PUNE water main so that the progress of his/their work is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

CLAUSE 32:
Alternate Water Arrangements

i) Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the IISER PUNE, no charge shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. The Engineer-in-Charge shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.

ii) The contractor shall be allowed to construct temporary wells in IISER PUNE land for taking water for construction purposes only after he has got permission of the Engineer-in-Charge in writing. No charges shall be recovered from the contractor on this account, but the contractor shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

CLAUSE 33 :
Return of Surplus Materials

Notwithstanding anything contained to the contrary in this contract, where any materials for the execution of the contract are procured with the assistance of IISER PUNE either by issue from IISER PUNE stocks or purchase made under orders or permits or licenses issued by IISER PUNE, the contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose of them without the written permission of the IISER PUNE and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition, the contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and/or for criminal breach of trust, be liable to IISER PUNE for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

CLAUSE 34 :
Employment of Technical Staff and Employees

Contractors Superintendence, Supervision, Technical Staff & Employees

(i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in Special Condition of contract. The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of the approval from Engineer-in-Charge and shall be available at site before start of work.

All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representative(s). The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself/themselves, as required, to the Engineer-in-Charge and/or his designated representative to take instructions. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer-in-Charge and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative(s) in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements, checked measurements/test checked measurements. The representative(s) shall not look after any other work. Substitutes, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days.

If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this Clause, a recovery (non-refundable) shall be effected from the contractor as specified in Schedule `C' and the decision of the Engineer-in-Charge as recorded in the site order book shall be final and binding on the contractor. Further if the contractor fails to appoint suitable technical Principal technical representatives and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the

execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every on account bill/ final bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

ii) The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work.

The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconduct himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE 35 : **Levy/Taxes Payable by Contractor**

i) GST, building and other construction worker welfare cess or any other cess/ tax in respect of this contract shall be payable by the contractor and Government shall not entertain any claim whatsoever in this respect.

ii) The contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities.

iii) If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the IISER PUNE and does not any time become payable by the contractor to the State Government. Local authorities in respect of any material used by the contractor in the works then in such a case, it shall be lawful to the IISER PUNE and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor.

CLAUSE 36:
Conditions for Reimbursement of Levy/ Taxes if levied after receipt of Tenders

i) All tendered rates shall be inclusive of all taxes and levies (including GST) payable under respective statutes. However, pursuant to the Constitution (46th Amendment Act, 1982), if any further tax or levy is imposed by Statute, after the last stipulated date for the receipt of tender including extensions if any and the contractor thereupon necessarily and properly pays such taxes/ levies, the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Director IISER PUNE (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.

ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the IISER PUNE and/or the Engineer-in-Charge and further shall furnish such other information/ document as the Engineer-in-Charge may require from time to time.

iii) The contractor shall, within a period of 30 days of the imposition of any such further tax or levy, pursuant to the Constitution (Forty Sixth Amendment) Act 1982, give a written notice thereof to the Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

CLAUSE 37 :
Termination of Contract on Death of Contractor

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Engineer-in-charge on behalf of the Director IISER PUNE shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 38 :
If Relative Working in IISER PUNE then the Contractor not Allowed to Tender

The contractor shall not be permitted to tender for works in the IISER PUNE responsible for award and execution of contracts in which his near relative is posted as Accountant or as an Officer in any capacity between the grades of the Engineer-in-Charge and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Officer in IISER or in the Ministry of HRD. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this IISER PUNE. **If however the contractor is registered in any other department, he shall be debarred from tendering in IISER PUNE of this condition.**
NOTE: By the term "near relatives" is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.

CLAUSE 39:
No Gazetted Engineer to Work as Contractor within One Year of Retirement.

No Engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in an engineering department of the Government of India shall work as a contractor or employee of a contractor for a period of; one years after his retirement from government service without the previous permission of Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Government of India as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

CLAUSE 40:
Compensation During Warlike Situations

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Engineer-in-Charge and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by Engineer-in-Charge up to Rs.5000/- and by the Director IISER PUNE concerned for a higher amount. The contractor shall be paid for the damages/ destruction suffered and for the restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on all parties to this contract.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or warlike operations(a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the A.R.P. Officers or the Engineer-in-Charge. (b) for any material etc. not on the site of the work or for any tools, plant, machinery scaffolding, temporary building and other things not intended for the work.

In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Engineer-in-Charge.

CLAUSE 41:
Apprentices Act Provisions to be complied with

The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the Engineer-in-Charge may in his discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

CLAUSE 42:
Release of Security Deposit after Labour Clearance.

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate from the Labour Officer. As soon as the work is virtually complete the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, or record till after 3 months after completion of the work and/ or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.

(iv) SAFETY CODE

1. Suitable scaffolds should be provided for workmen for all works that cannot safely be done from the ground, or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well as suitable footholds and hand-hold shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (1/4 horizontal and 1 vertical)

2. Scaffolding of staging more than 3.6m (12 ft) above the ground or floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly attached or bolted, braced and otherwise secured at least 90 cm (3ft) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends there of with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent if from swaying from the building or structure.

3. Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6 (12ft) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (2) above.

4. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of person or materials by providing suitable fencing or railing whose minimum height shall be 90cm (3ft).

5. Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9m (30ft) in length while the width between side rails in rung ladder shall in no case be less than 29 cm. (11 ½") for ladder up to and including 3m (10ft) in length. For longer ladders this width should be increased at least ¼" for each additional 30cm (1foot) of length. Uniform step spacing of not more than 30cm shall be kept. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect the public from accident and shall be bound to bear the expenses of defense of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit, action or proceedings to any such person or which may, with the consent of the contractor, be paid to compensate any claim by any such person.

6. Excavation and Trenching - All trenches 1.2m (4ft) or more in depth, shall at all times be supplied with the least one ladder for each 30m (100ft) in length or fraction thereof Ladder shall extend from bottom of the trench to at least 90 cm (3ft) above the surface of the ground. The side of the trenches which are 1.5m (5ft) or more in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides collapsing. The excavated materials shall not be placed within 1.5m (5ft) of the edges of the trench or half of the depth of the trench whichever is more. Cutting

shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

7. Demolition – Before any demolition work is commenced and also during the progress of the work,

   i) All roads and open areas adjacent to the work site shall either be closed or suitably protected.

   ii) No electric cable or apparatus which is liable to be a source of danger or a cable or apparatus used by the operator shall remain electrically charged.

   iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

   iv) Wire mesh netting to be provided for dismantling areas.

8. All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned. The following safety equipment shall invariably be provided :

   i) Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

   ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.

   iii) Those engaged in welding works shall be provided with welder's protective eye-shields and helmets.

   iv). Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

   v). When workers are employed in sewers and manholes, which are in active use, the contractor shall ensure that the manholes are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measure is adhered to:

      a). Entry for workers into the line shall not be allowed except under supervision of the Engineer-in-Charge or any other Higher officer.

b). At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.

c). Before entry presence of Toxic gases should be tested by inserting wet lead acetate paper which changes color in the presence of such gases and gives indication of their presence.

d). Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.

e). Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.

f). The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.

g). No smoking or open flames shall be allowed near the blocked manhole being cleaned.

h). The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.

i). Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

j). Gas masks with Oxygen Cylinder should be kept at site for use in emergency.

k). Air-blowers should be used for flow of fresh air through the manholes. Whenever called for portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 metres away for the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.

l). The workers engaged for cleaning the manholes/ sewers should be properly trained before allowing to work in the manhole.

m). The workers shall be provided with Gumboots or non sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with

barrier cream for anointing the limbs before working inside the sewer lines.

n). Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.

o). If a man received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.

p). The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case well be final.

vi). The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:-

a). No paint containing lead or lead products shall be used except in the form of paste or readymade paint.

b). Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.

c). Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.

9. An additional Clause (viii) (i) of Safety Code (iv) the Contractor shall not employ women and man below the age of 18 on the work of painting with product containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use :

i). While lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.

ii). Measures shall be taken, wherever required in order to prevent danger arising from the application of a paint in the form of spray.

iii). Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping.

iv). Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.

v). Overall shall be worn by working painters during the whole of working period.

vi) Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.

vii) Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of Institute.

viii) Institute may require, when necessary medical examination of workers.

ix) Instruction with regard to special hygienic precautions to be taken in the painting trade shall be distributed to working painters.

10. When the work is done near any place where there is risk of drowning, all necessary equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.

11. Use of hoisting machines and tackle including their attachment, anchorage and supports shall conform to the following standards or conditions :-

i). a). These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.

b). Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

ii). Every crane driver or hoisting appliance operator, shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.

iii). In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

iv). In case of IISER PUNE machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractor's machines the contractors shall notify the safe working load of the machine to the Engineer-in-Charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer-in-Charge concerned.

12. Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, and wearing apparel, such as gloves, sleeves and boots and may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

13. All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.

14. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place of work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.

15. To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge or their representatives.

16. Notwithstanding the above clauses from (1) to (15) there is nothing in these to exempt the contractor from the operations of any other Act or Rules in force in the Republic of India.

(v) MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGMENTS FOR WORKERS EMPLOYED BY CONTRACTORS FOR THIS WORK.

1. APPLICATION

The rules shall apply to all buildings and construction works in which twenty or more workers are ordinarily employed or are proposed to be employed in any day during the period which the contract work is in progress.

2. DEFINITION

Work place means a place where twenty or more workers are ordinarily employed in connection with construction work on any day during the period during which the contract work is in progress.

3. **FIRST-AID FACILITIES**

(i) At every work place there shall be provided and maintained, so as to be easily accessible during working hours, First –aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.

(ii)The First-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment:-

(a) For work places in which the number of contract labour employed does not exceed 50.

Each first-aid box shall contain the following equipment:

1. 6 small sterilized dressings.
2. 3 medium size sterilized dressings
3. 3 large size sterilized dressings
4. 3 large burn dressings
5. 1(30ml) bottle containing a two percent alcoholic solution of iodine
6. 1(30ml) bottle containing salvolatile having dose and mode of administration indicated on the label.
7. 1 Snakebite lancet.
8. 1(30ml) bottle of potassium permanganate crystals.
9. 1 Pair scissors.
10. 1 copy of first aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
11. 1 Bottle containing 100 Tablets (Each of 5 Gms) of asprin.
12. Ointment for burns.
13. A Bottle of suitable surgical antiseptic solution.

a. For work places in which the number of contract labour exceed 50.

Each first-aid box shall contain the following equipment:

1. 12 small sterilized dressings
2. 6 medium size sterilized dressings
3. 6 large size sterilized dressings
4. 6 large size sterilized burn dressings
5. 6(15 Gms) packets sterilized cotton wool.
6. 1(60 ml.) bottle containing a two percent alcoholic solution iodine
7. 1 (60ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
8. 1 roll of adhesive plaster
9. snake bite lancet
10. 1 (30gms.) bottle of potassium permanganate crystals.
11. 1 pair scissors.
12. 1 copy of the first-aid leaflet issued by the Director General Factory Advice Service and Labour Institutes/ Government of India.
13. A bottle containing 100 tables (each of 5 gms.) of aspirin
14. Ointment for burns
15. A bottle of suitable surgical antiseptic solution.

(iii) Adequate arrangements shall be made for immediate recoupment of the Equipment when necessary.

(iv) Nothing except the prescribed contents shall be kept in the First-aid box.

(v) The First-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

(vi) A person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.

(vii) In work places where the number of contract labour employee is 500 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained compounder. The compounder shall be on duty and shall be available at all hours when the workers are at work.

(viii) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

4. **DRINKING WATER**

In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn form it for, drinking. All such wells shall be entirely closed in and be provided with a trap door, which shall be dust and waterproof.

A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5. WASHING FACILITIES

(i) In every work place adequate and suitable facilities for the washing shall be provided and maintained for the use of contract labour employed therein .

(ii) Separate and adequate cleaning facilities shall be provided for the use of male and female workers.

(iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

6 LATRINES AND URINALS

(i) Latrine shall be provided in every work place on the following scale namely:

(a) Where female are employed, there shall be at least one latrine for every 25 females.

(b) Where male are employed, there shall be at least one latrine for every 25 males.

Provided that, where the number of males or females exceed 100,it shall be sufficient if there is one latrine for 25 males or females as the case may be up to first 100 ,one for every 50 thereafter.

(ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have proper door and fastening.

(iii) Construction of latrines: The inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials shall be cement washed inside and outside at least once a year, latrines shall not be of a standard lower than borehole system.

(iv) (a) Where workers of both sexes are employed , there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as case may be.

(b)The notice shall also bear the figure of a man or of a woman, as the case may be.

(v) There shall be at least one urinal for male workers up to 50 & one for female workers up to 50 employed at time, provided that where the number of male or female workmen, as the case may be exceeds 500,it shall be sufficient if there is one urinal for every 50 males or females up to the first 500 & one for every one 100 or part thereafter.

(vi) (a) The latrines & urinals shall be adequately lighted & shall be maintained in a clean & sanitary condition at all times.

(b)Latrines & urinals other than those connected with flush sewage system shall comply with the requirements of the Public Health Authorities.

(vii) Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrines & urinals.

(viii) Disposal of excreta: -unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the workplace shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose &covering it with a 15 cm. Layer of waste or refuse & then covering it with layer earth for a fortnight (when it will turn to manure)

(ix.) The Contractor shall at his own expense, carry out all the instructions issued to him by the Engineer–in- Charge to effect proper disposal of night soil and other conservancy work in respect of contractor's workmen or the employees on the site. The contractor shall be levied by Municipal or Cantonment Authority for execution of such on his behalf.

7 PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for meals and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 meters (10 ft.) from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m. (6 sft.) per head.

Provided that the Engineer-in-Charge may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

8 **CRECHES**

(i) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under at the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with specifications as per clause 19H (ii) a, b & c.

ii) The rooms shall be provided with suitable and sufficient openings in for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

iii) The contractor shall supply adequate number of toys and games in the playroom and sufficient number of cots and bedding in the bedroom.

iv) The contractor shall provide one Ayaa to look after the children in the crèche when, the number of women workers does not exceed 50 and two when the number of women workers exceed 50.

v) The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

9 **CANTEEN**

(i) In every work place where the work regarding the employment of contract labour is likely to continue for six months and where in contract labour numbering one hundred or more are ordinarily employed an adequate canteen shall be provided by the contractor for the use of such contract labour.

(ii) The canteen shall be maintained by the contractor in an efficient manner.

(iii) The canteen shall consist of at least a dining hall, kitchen, store room, pantry and washing places separately for workers and utensils.

(iv) The canteen shall be sufficiently lighted at all times when any person has access to it.

The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colure washed at least once in each year.

Provided that the inside walls of the kitchen shall be lime-washed every four months.

(vi) The premises of the canteen shall be maintained in a clean and sanitary condition.

(vii) Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

(viii) Suitable arrangements shall be made for the collection and disposal of garbage.

(ix) The dining hall shall accommodate at a time 30% of the contract labour working at a time.

(x) The floor area of dining hall excluding the area occupied by the service counter any furniture except tables and chairs shall not be less than one square meter (10sft) per diner to be accommodated as per prescribed as prescribed in sub-Rule 9.

(xi). (a) A portion of dining hall and service counter shall be partitioned off and reserved for women worker in proportion to their number.

(b)Washing place for women shall be separate and screened to secured privacy

(xii) Sufficient tables stools, chair or benches shall be available for the number of diners to be accommodated as prescribed in sub-Rule9.

(xiii) (a) 1. They shall be provided and maintained sufficient utensils crockery, furniture and any other equipment necessary for the efficient running of the canteen

2. The furniture utensils and other equipment shall be maintained in a clean &hygienic condition.

(b) 1. Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

2. A service counter, if provided, shall have top of smooth and impervious material.

3. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

(xiv) The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

(xv) The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No profit, No losses and shall be conspicuously displayed in the canteen.

(xvi) In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken in to consideration as expenditure namely.

(a) The rent of land and building.

(b) The depreciation and maintenance charges for the building and equipment provided for the canteen.

(c) The cost of purchase, repairs and replacement of equipment including furniture, crockery, cutlery and utensils.

(d) The water charges and other charges incurred for lighting and ventilation.

(e) The interest and amounts spent on the provision and maintenance equipment provided for the canteen.

(xvii) The accounts pertaining to the canteen shall be audited once every 12 months by registered accountants and auditors

10. ANTI MALARIAL PRECAUTIONS:-

The contractor shall at his own expense, conform to all anti- material instructions given to him by Engineer –in-Charge including the filling up of any borrow pits which may have been dug by him.

11 The above rules shall be incorporated in the contracts and in notices inviting tenders and shall form an integral part of the contracts .

12 AMENDMENTS.

Government may, from time to time, add to or amend these rules and issue directions- it may consider necessary for purpose of removing any difficulty which may arise in the administration thereof

(vi) Contractor's Labour Regulations

1. DEFINITIONS

i. Workman means any person employed by IISER PUNE or its contractor directly or indirectly through a subcontractor with or without the knowledge of the IISER PUNE to do any skilled, semiskilled or unskilled manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment are expressed or implied but does not include any person:-

a) Who is employed mainly in a managerial or administrative capacity : or

b) Who, being employed in a supervisory capacity draws wages exceeding five hundred rupees per mensem or exercises either by the nature of the duties attached to the office or by reason of powers vested in him, function mainly of managerial nature: or

c) Who is an out worker, that is to say, person to whom any articles or materials are given out by or on behalf of the principal employers to be made up cleaned, washed, altered, ornamental finished, repaired adopted or otherwise processed for sale for the purpose of the trade or business of principal employers and the process is to be carried out either in the home of the out worker or in some other premises, not being premises under the control and management of principal employer.

No person below age of 14 years shall be employed to act as a workman.

ii) **Fair Wages** means wages whether for time or piece work fixed and notified under the provisions of the Minimum Wages Act from time to time.

iii) **Contractors** shall include every person who undertakes to produce a given result other than a mere supply of goods or articles of manufacture through contract labour or who supplies contract labour for any work and includes a subcontractor.

iv) **Wages** shall have the same meaning as defined in the Payment of Wages Act.

2. i) Normally working hours of an adult employee should not exceed 9 hours a day. The working day shall be so arranged that inclusive of interval for rest, if any, it shall not spread over more than 12 hours on any day.

ii) When an adult worker is made to work for more than 9 hours on any day or for more than 48 hours in any week, he shall be paid over time for the extra hours put in by him at double the ordinary rate of wages.

iii) a) Every worker shall be given a weekly holiday normally on a Sunday, in accordance with the provisions of the Minimum Wages (Central) Rules 1960 as amended from time to time irrespective of whether such worker is governed by the Minimum Wages Act or not.

b) Where the minimum wages prescribed by the Government under the Minimum Wages Act are not inclusive of the wages for the weekly day of rest, the worker shall be entitled to rest day wages at the rate applicable to the next preceding day, provided he has worked under the same contractor for a continuous period of not less than 6 days.

c) Where a contractor is permitted by the Engineer-in-Charge to allow a worker to work on a normal weekly holiday, he shall grant a substituted holiday to him for the whole day on one of the five days immediately before or after the normal weekly holiday and pay wages to such worker for the work performed on the normal weekly holiday at overtime rate.

3. DISPLAY OF NOTICE REGARDING WAGES ETC.

Contractor shall before he commences his work on contract , display and correctly maintain and continue to display and correctly maintain in a clear and legible condition in conspicuous places on the work , notices in English and in local Indian languages spoken by the majority of the workers giving the minimum rates of wages fixed under minimum wages acts, the actual wages being paid, the hours of work for which such wages are earned, wages periods, dates of payments of wages and other relevant information as per appendix 'III' .

4. PAYMENT OF WAGES.

i. The contractor shall fix wage periods in respect of which wages shall be payable

ii. No wage period shall exceed one month.

iii. The wages of every person employed as contract labour in an establishment or by contractor where less than one thousand such person are employed shall be paid before expiry of seventh day & in other cases before expiry of tenth day after the last day of period in respect of which the wages are payable

iv. Where the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the second working day from the date on which his employment is terminated.

v. All payment of wages shall be made on a working day at the work premises and during the working time and on a date notified in advance and in case the work is completed before the Expiry of the wage period, final payment shall be made within 48 hours of the last working day.

vi. Wages due to every worker shall be paid to him direct or to other person authorized by him in this behalf.

vii. All wages shall be paid in current coin or currency or in both.

viii. Wages shall be paid without any deductions of any kind except those specified

by the Central Government by general or special order in this behalf or permissible under the Payment of Wages Act 1956.

ix. A notice showing the wages period and the place and time of disbursement of wages shall be displayed at the place of work and a copy sent by the contractor to the Engineer-in-Charge under acknowledgment.

x. It shall be the duty of the contractor to ensure the disbursement of wages in the presence of the Engineer–in-charge or any other authorized representative of the Engineer-in-Charge who will be required to be present at the place and time of disbursement of wages by the contractor to workmen.

xi. The contractor shall obtain from the Engineer-in-charge or any other authorized representative of the Engineer-in-Charge as the case may be, a certificate under his signature as the end of the entries in the "Register of wages" or the "Wage cum-Muster Roll " as the case may be in the following from :-

"Certified that the amount shown in column No---------- has been paid to the workman concerned in my presence on ---------- at ----------"

5. FINES AND DEDUCTIONS WHICH MAY BE MADE FROM WAGES

(i) The wages of a worker shall be paid to him without any deduction of any kind except the following

(a) Fines

(b) Deduction for absence from duty i.e. from the place or the places where by the terms of his employment he is required to work. The amount of deduction shall be in proportion to the period for which he was absent.

(c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody, or for loss of money or any other deduction which he is required to account, where such damage or loss is directly attributable to his neglected or default.

(d) Deduction for recovery of advance or for adjustment of overpayment of wages, advances granted shall be entered in a register.

(e) Any other deduction which the central government may from time to time allow.

(ii) No fine should be imposed on any worker save in respect of such acts and Omissions on his part have been approved of by the Chief Labour Commissioner.

Note: - An approved list of Acts & Omissions for which fine can be imposed is enclosed at Appendix-X

(iii) No fine shall be imposed on a worker and no deduction for damage and loss shall be made from his wages until the worker has been given opportunity of showing cause against such fines or deductions.

(iv) The total amount of fine which may be imposed in any one wage period on a worker shall not exceed an amount equal to three paise in a rupee of the total wages, payable to him in respect of that wage period.

(v) No fine imposed on any worker shall be recovered from him by installment, or after the expiry of sixty days from the date on which it was imposed.

(vi) Every fine shall be deemed to have been imposed on the day of the act or omission in respect of which it was imposed.

6. LABOUR RECORDS

(i) The contractor shall maintain a **Register of persons employed** on work on contract in Form XIII of the CL (R&A) Central Rules 1971 (Appendix IV)

(ii) The contractor shall maintain a **Muster** Roll register in respect of all workmen employed by him on the work under Contract in Form XVI of the CL (R&A) Rules 1971 (Appendix V).

(iii) The contractor shall maintain a **Wage Register** in respect of all workmen employed by him on the work under contract in Form XVII of the CL (R&A) Rules 1971 (Appendix VI).

(iv) **Register of accident** - The contractor shall maintain a register of accidents in such form as may be convenient at the work place but the same shall include the following particulars:

a) Full particulars of the laborers who met with accident
b) Rate of Wages
c) Sex
d) Age
e) Nature of accident and cause of accident.
f) Time and date of accident
g) Date and time when admitted in Hospital,
h) Date of discharge from the Hospital
i) Period of treatment and result of treatment.
j) Percentage of loss of earning capacity and disability as assessed by Medical officer
k) Claim required to be paid under Workmen's Compensation Acts.
l) Date of payment of compensation.
m) Amount paid with details of the person to whom the same was paid.
n) Authority by whom the compensation was assessed.
o) Remarks

The contractor shall maintain a **Resister of Fines** in the in the form XII of CL(R&A) Rules 1971(Appendix-XI)

The Contractor shall display in good condition and in conspicuous place of work the approved list of acts and omission for which fine can be imposed (Appendix-X).

The contractor shall maintain a **Resister of deduction for damage or loss** in Form XX of the CL(R&A) Rules 1971(Appendix-XII)

The contractor shall maintain a Register **of Advances** in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIII).

The contractor shall maintain a Register of Overtime in Form XXIII of the CL (R&A) Rules 1971 (Appendix-XIV).

7. ATTENDANCE CARD-CUM-WAGE SLIP

i) The contractor shall issue an **Attendance card-cum-wage slip** to each workman employed by him in the specimen format (Appendix-VII)

ii) The card shall be valid for each wage period.

iii) The contractor shall mark the attendance of each workman on the card twice each day, once at the commencement of the day and again after the rest interval, before he actually starts work.

iv) The card shall remain in possession of the worker during the wage period under reference.

v) The contractor shall complete the wage slip portion on the reverse of the card at least a day prior to the disbursement of wages in respect of the wage period under reference.

vi) The contractor shall obtain the signature or thumb impression of the worker on the wage slip at the time of disbursement of wages and retain the card with himself.

8. EMPLOYMENT CARD

The contractor shall issue an **Employment Card** in Form XIV of the CL (R&A) Central Rules 1971 to each worker within three days of the employment of the (Appendix-VIII).

9. SERVICE CERTIFICATE

On termination of employment for any reason whatsoever the contractor shall issue to the workman whose services have been terminated, a **Service certificate** in Form XV of the CL (R&A) Central Rules 1971 (Appendix-IX)

10. PRESERVATION OF LABOUR RECORDS

All records required to be maintained under Regulation Nos. 6&7 shall be preserved in original for a period of three years from the date of last entries made in them and shall be made available for inspection by the Engineer-in- Charge or Labour Officer or any other officers authorized by the Ministry of Urban Development in this behalf.

11. POWER OF THE LABOUR OFFICER TO MAKE INVESTIGATION OR INQUIRY

The Labour officer or any person authorized by Central Government on their behalf shall have power to make to make enquiry with a view to ascertaining & enforcing due & proper observance of Fair wage Clauses and the Provisions of these Regulations. He shall investigate in to any complaint regarding the default made by the contractor or subcontractor in regard to such provision.

12. REPORT OF LABOUR OFFICER.

The Labour Officer or other persons authorized as aforesaid shall submit a report of result of his investigation or enquiry to the Director IISER PUNE concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned. In case appeal is made by the contractor under Clause 13 of these regulation, actual payment to labourers will be made by Director IISER PUNE after the Engineer-in-Charge has given his decision on such appeal.

i) The Director IISER shall arrange payments to the labour concerned within 45 days from the receipt of the report from the Labour Officer or the Engineer-in-Charge as the case may be.

13. APPEAL AGAINST THE DECISION OF LABOUR OFFICER

Any person aggrieved by the decision and recommendations of the Labour Officer or other person so authorized may appeal against such decision to the Engineer-in-Charge concerned within 30 days from the date of decision, forwarding simultaneously a copy of his appeal to the Director IISER concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

14. PROHIBITION REGARDING REPRESENTATION THROUGH LAWYER

i) A. workman shall be entitled to be represented in any investigation or enquiry under these regulations by:

a) An officer of a registered trade union of which he is a member.

b) An officer of a federation of trade unions to which the trade union referred to in Clause (a) is affiliated.

c) Where the employer is not a member of any registered trade union, by an officer of a registered trade union, connected with the industry in which the worker is employed or by any other workman employed in the industry in which the worker is employed.

ii) An employer shall be entitled to be represented in any investigation or enquiry under these regulations by

b) An officer of an association of employers of which he is a member.

c) An officer of a federation of associations of employers to which association referred to in Clause (a) is affiliated.

d) Where the employers is not a member of any association of employers, by an officer of association of employer connected with industry in which employer engaged or by any other employer, engaged in the industry in which the employer is engaged.

iii) No party shall be entitled to be represented by legal practitioner in any investigation or enquiry under these regulations.

15. INSPECTION OF BOOKS AND SLIP:-

Contractor shall allow inspection of all the prescribed labour records to any of his workers or to his agent at a convenient time and place after due notice is received or to the Labour Officer or any other person, authorized by the Central Government on his behalf.

16. SUBMISSION OF RETURNS

The contractor shall submit periodical returns as may be specified from time to time.

17. AMENDMENTS

The Central Government may from time to time add to or amend the regulation and on any question as to the application /interpretation or effect of those regulations the decision of the Engineer-in-Charge concerned shall be final.

Appendix 'I'

(vii) Form of Performance Security (Guarantee)

Bank Guarantee Bond

1. In consideration of the Director IISER PUNE (hereinafter called "IISER-PUNE") having offered to accept the terms and conditions of the proposed agreement between----------and---------- (hereinafter called "the said Contractor(s)") for the work ----------(hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs.---------(Rupees ----------only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

   We ---------- (hereinafter referred to as "the Bank") hereby (indicate the name of the Bank) Undertake to pay to the IISER PUNE an amount not exceeding Rs----------. (Rupees ----------only) on demand by IISER PUNE

2. We ----------do hereby undertake to pay the amounts due and payable (indicate the name of the Bank) under this Guarantee without any demure, merely on demand from the IISER PUNE stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s).Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs---------- (Rupees----------only)

3. We, the said bank further undertake to pay the IISER PUNE any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

   The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, ---------- further agree that the guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the IISER PUNE under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the IISER PUNE certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5. We, ---------- further agree with the IISER PUNE that the IISER PUNE (indicate the name of the Bank) shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to

time or to postpone for any time or from time to time any of the powers exercisable by the IISER PUNE against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the IISER PUNE or any indulgence by the IISER PUNE to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

7. We, ---------- lastly undertake not to revoke this guarantee except (indicate the name of the Bank) with the previous consent of the IISER PUNE in writing.

8. This guarantee shall be valid up to----------unless extended on demand by the IISER PUNE. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs---------- (Rupees----------only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

   Dated the ----------day of----------for----------(indicate the name of the Bank)

(viii) Proforma of Agreement

ARTICLE OF AGREEMENT is made at PUNE on the ..... day of..... 2017 between Indian Institutes Of Science Education and Research PUNE, (IISER PUNE) (Herein after referred to as the employer which expression shall includes its successors and assigns where the context so admits) of the one part and ----------
---

(Hereinafter referred to as the "contractor(s) which expression shall include his/their respective heirs, executors, administrators and assigns where the context so admits) of the other part.

WHEREAS the employer is desirous of getting the work…….don e and caused drawings, schedule of quantities, terms and conditions and specification describing the work to be executed and completed maintained.(hereinafter called "the works")and has accepted a tender of the CONTRACTOR for the execution, completion and guarantee of such works.

AND WHERE AS the contractor has deposited a Sum Of Rs.----------

---------- With employer as security

for the due performance of this agreement as provided in the said Conditions.

NOW IT IS HEREBY agreed and declared by and between the parties as follows.

(a) In consideration of the payments to be made to him as herein after provided the contractor shall upon and subject to the condition herein contained and the said conditions executed and complete the work shown upon the said drawings and such further detailed drawings which may be furnished to him and described in the said specifications and the said priced schedule of quantities within ---------- from the date of order to commence the work.

(b) The employer shall pay to the contractor such sum that shall become payable hereunder at the times and in the manner specified in the said conditions.

(c) Time is essence of this agreement and the contractor agrees to pay compensation for delay as per Clause 2 of general Condition of Contract.

(e) The documents mentioned below under (g) shall form the basis of this agreement and the decision Engineer or the Engineers in Charge, in reference to all matters of dispute as to material and workmanship shall be final and binding on both the parties.

(f) The employer through the Engineer-in-Charge reserves to himself the right of altering the drawings and the adding to or omitting any items of works or of having portions of the same carried out departmentally or otherwise and such alterations or variations shall not violate agreement.

(g) This agreement comprises the work said above and the entire subsidiary work connected there with, even though work may not be shown on the drawings or described in the said specifications or the priced schedule of quantities.

This agreement contains the following documents in addition to pages of articles of agreement.

(a) NIT/WORK ORDER
(b) Item rate tender form & contract for works.
(c) General Rules and Directions
(d) Condition of contracts
(e) Clauses of contracts
(f) Safety code
(g) Models rules for the protection of health, sanitary arrangements for workers employed by IISER PUNE or its Contractors.
(h) Contractors labour regulations
(i) Proforma of agreement
(j) Proforma of Schedule A to C
(k) Special Condition of contracts
(l) Technical specifications
(m) Tenders drawings
(n) Price Schedule/ Schedule of Quantities
(o) All corresponds between the parties until award of contract.
(p) Prequalification document

In witness whereof the parties hereto have their respective hands the day and the year herein above written.

Signed by for and on behalf of the employer.

Engineer In Charge

Witness (1)----------

Witness (2)----------

Signed by the said contractor

Address---------- Witness (1)----------

Countersigned Witness (2)----------

(IX) PROFORMA BANK GUARANTEE IN LIEU OF BID SECURITY

(On Non Judicial Stamp paper to be stamped in accordance with stamp act, the stamp paper to be in name of Executing Bank)

Ref..... Date.....

Bank Guarantee No.....

To **INDIAN INSTITUTE OF SCIENCE EDUCATION & RESEARCH, PUNE**

_____

_____

_____

Dear Sir,

In accordance with your Notice Inviting Tender for _____under your tender No_____ dated _____ M/s _____ (hereinafter called the Tenderer) with following directors on their Board of Directors /Partners of the firm.

1_____ 2_____

3_____ 4_____

5_____ 6_____

7_____ 8_____

9_____ 10_____

Wish to participate in the said tender for the following:

1_____

2_____

3_____

Whereas it is a condition in the tender documents that the tenderer has to deposit Bid Security with respect to the tender, with Indian Institute of Science Education & Research, PUNE amounting to Rs……..... or alternatively the tenderer is required to submit "Bank Guarantee" from a nationalized bank irrevocable and operative till 28 days after the validity of the offer. (i.e. 120 days from the last date of receipt of bid), for the like amount which amount is likely to be forfeited on the happening of contingencies mentioned in the tender documents. And whereas the tenderer desires to secure exemption from deposit of Bid Security and has offered to furnish a Bank Guarantee for a sum of Rs…….. to the IISER, PUNE for the purpose of securing exemption from the deposit of Bid Security.

1. NOW THEREFORE, we the ……..... Bank, a body corporate constituted under the Banking Companies (Acquisition and Transfer of undertakings) Act 1969 and having a branch office at…….. (hereinafter referred to as the Bank") do hereby undertake and agree to pay on demand in writing by the IISER, PUNE the amount of Rs…….. (Rupees.....) to the **Indian Institute of Science Education & Research, PUNE** without any demur, reservation or recourse.

2. We, the aforesaid Bank, further agree that the IISER, PUNE shall be the sole judge of and as to whether the tenderer has committed any breach or breaches of any of the terms and conditions of the tender and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the IISER, PUNE on account thereof the extent of the bid security required to be deposited by the Tenderer in respect of the said Tender document and the decision of the IISER, PUNE that the Tenderer has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the IISER, PUNE shall be final and binding on us.

3. We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect until it is released by the IISER, PUNE and change in the constitution, liquidation or dissolution of the Tenderer shall not discharge our liability guaranteed herein.

4. It is further declared that it shall not be necessary for the IISER, PUNE to proceed against the Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the IISER, PUNE may have obtained or shall obtain from the Contractor at the time when proceedings are taken against the Bank for whatever amount may be outstanding or unrealized under the Guarantee.

5. The right of the IISER, PUNE to recover the said amount of Rs…….. (Rupees ……..) from us in manner aforesaid will not be affected or suspended by reason of the fact that any dispute or disputes have been raised by the said M/s…….. (Tenderer) and/or that any dispute or disputes are pending before any authority, officer, tribunal or arbitrator(s) etc.

6. Notwithstanding anything stated above, our liability under this guarantee shall be restricted to Rs……..(Rupees……..) and our guarantee

shall remain in force up to…….. and unless a demand or claim under the guarantee is made on us in writing within three months after the aforesaid date i.e. on or before the …….. all your rights under the guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

Date.....

place.....

(Signature)_____

(Printed Name)_____

(Designation)_____

(Bank's Common seal_____

(Authorisation No.)_____

In the presence of:

Witness

1)_____

2)_____

Accepted

(Signature of the Officer)

For and on behalf of the

INDIAN INSTITUTE OF SCIENCE EDUCATION
AND RESEARCH, PUNE

PPENDIX (xv) -CLAUSE 25

APPENDIX XV Notice for appointment of Arbitrator [Refer Clause 25]

To
The Chairman
Building and Works Committee
IISER PUNE.

Dear Sir,
In terms of clause 25 of the agreement, particulars of which are given below, I/we hereby give notice to you to appoint an arbitrator for settlement of disputes mentioned below:

1. Name of applicant
2. Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd. Co.
3. Full address of the applicant
4. Name of the work and contract number in which arbitration sought
5. Name of the Division which entered into contract
6. Contract amount in the work
7. Date of contract
8. Date of contract Date of initiation of work
9. Stipulated date of completion of work
10. Actual date of completion of work (if completed)
11. Total number of claims made
12. Total amount claimed
13. Date of intimation of final bill (if work is completed)
14. Date of payment of final bill (if work is completed)
15. Amount of final bill (if work is completed)
16. Date of request made to SE for decision
17. Date of receipt of SE's decision
18. Date of appeal to you
19. Date of receipt of your decision.

Specimen signatures of the applicant

(only the person/authority who signed the contract should sign)

I/We certify that the information given above is true to the best of my/our knowledge. I/We enclose following documents.

1. Statement of claims with amount of claims.
2.

Yours faithfully

Copy in duplicate to:
Engineer in Charge.

(v) PROFORMA OF SCHEDULES

(Operative Schedules to be supplied to each intending tenderer)

SCHEDULE 'A'

Schedule of quantities Enclosed as Financial bid document

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S.No	Description of item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of issue
1	2	3	4	5
	NIL			

Tools and plants to be hired to the contractor

S.No	Description	Hire charges per day	Place of issue
1	2	3	4
	NIL		

Extra schedule for specific requirements/document for the work, if any. -- NIL—

SCHEDULE 'C'

Reference to general Condition of Contract

Name of work &Location: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-20

Estimated cost put to tender **:** **Rs. 28 lakh**

(i) (ii)	Earnest money	**:**	**Rs. 56000/-** (To be returned after receiving Performance guarantee)
(iii)	Performance Guarantee	:	5% of tendered value.
(iv)	Security Deposit	:	2.5 % of tendered/accepted value.

SCHEDULE 'C'

GENERAL RULES & DIRECTIONS:

Officer inviting tender	Engineer In Charge IISER, PUNE.
Maximum percentage for quantity of items of work To be executed beyond which rates are to be Determined in accordance with Clauses 12.2 & 12.3:	See below

Definitions:

2(v)	Engineer-in-Charge	Engineer-in-Charge (Registrar IISER Pune)
2(viii)	Accepting Authority	Director, IISER, PUNE
2(ix)	Percentage on cost of materials and labour to cover all overheads and profits	15%
2(x)	Standard Schedule of rates	CPWD Delhi Schedule of Rates 2018 plus cost Index enhancement & Market rates
2(viii)	Department	Indian institute of Science Education & Research, IISER, PUNE
2(ix)	Standard contract Form	ITEM rate contract

Clause 1

(i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance 15days

(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above 7 days

Clause 2

Authority for fixing compensation under clause 2. The Director Indian institute of Science Education & Research, IISER PUNE

Clause 2 A

Whether Clause 2A shall be applicable Not Applicable

Clause 5

Number of days from the date of issue of letter of award works for reckoning date of start 15 days

Mile stone(s) as per table given below:-

Sl No.	**Description of Milestone (Physical)**	**Time allowed in days/months (From date of start)**	**Amount to be with-held in case of non-achievement of Milestone**
1.	Complete work as per NIT	45 Days	5.00 % of tender value

Time allowed for execution of 45 days

Authority to decide:

(i) Extension of time Engineer in Charge
(ii) Rescheduling of mile stones Engineer IN Charge

(iii) Shifting of date of start in case of Delay in handing over of site: Director IISER PUNE

Clause 6, 6 A

Clause applicable – (6or 6A) 6A Applicable

No running account bill shall be paid for the work till the applicable labour licenses, registration with GST, EPFO, ESIC and BOCW Welfare board, whatever applicable are submitted by the contractor to the Engineer in charge.

Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment Rs. 5.00 Lakhs

Clause 7A
Whether clause 7A shall be applicable: Yes.

Clause 10
List of testing equipment to be provided by the contractor at site lab. As per work requirements

Clause 10 A
Whether Clause 10 A shall be applicable :
Not Applicable

Clause 10 B
Whether Clause 10 B shall be applicable : Not applicable

Clause 10B(i)
Whether Clause 10B (i) shall be applicable. : Not Applicable.

Clause 10B(ii)
Whether Clause 10B (ii) shall be applicable. : Not Applicable.

Clause 10 C
Component of labour expressed as percent of value of work = Not Applicable

Clause 10 CA **:** Not Applicable

S. No.	Materials covered under this Clause	Base price and its corresponding period of all the materials covered under clause 10CA i/c GST (In Rupees) March, 2017	Nearest Materials (other than cement*, reinforcement bars, the structural steel and POL) for which All India whole sale Price Index to be Followed

CLAUSE 10 CC **NOT APPLICABLE**

Clause 10 CC to be applicable in contracts with stipulated period

of completion exceeding the period shown in next column ..... 12 months

Schedule of component of other Materials, Labour, POL etc.

for price escalation.

Component of civil (except materials covered under Clause 10CA /Electrical Construction materials expressed as percent of total value of work	Xm -- %
Component of Labour expressed as percent of total value of work.	Y -- %
Component of P.O.L- expressed as percent of total value of work.	Z..... 0..... %

Clause 11

Specifications to be followed for execution work

1) Technical specification given in Tender documents.

2) CPWD standard specification 2009 Volume I & II with up to date correction slips for civil works.

2a) CPWD standard specification for internal Electrical works – 2013, external electrical services- 2007, DG set & Wet riser, sprinkler, specification-2006, Substation works Part IV-2013.

3) Indian Standard Specification

4) Manufactures specification

5) Engineer In charge decision.

Clause 12

Type of work	**Project and original work**	
12.2 & 12.3	Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building Super structure work & other Associated Electro-mechanical works	30 %
12.5	(i) Deviation Limit beyond which clauses	30%

12.2 & 12.3 shall apply for foundation work

(Except items mentioned in earth work sub head in DSR and related items)

(ii) Deviation Limit for items mentioned in earth work
Sub head of DSR or related items 100%

Clause 16

Competent Authority for deciding Reduced rates — The Director Indian institute of Science Education &. Research, IISER PUNE

Clause 18

List of mandatory machinery, tools & plants - As per Annexure-II in the NIT
To be deployed by the contractor at site at his cost: Condition of Contract.

Clause 25

Constitution of Dispute Redressal Committee (DRC) Chairman - Prof. L S Shashidhara, IISER, PUNE.
Members: (1) Mr Sushant Baliga, Retd. ADG CPWD, New Delhi

Clause 34 (i)

Requirement of Technical Representative(s) and recovery rate to be affected from Contractor bill for non-deployment of technical staff at site of work:

S.N	Technical Representative(s)	Qualification & Discipline of the Technical representative(s)	Minimum Experience of the Technical representative(s)	Minimum Numbers to be employed at site for full duration of the project	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 34(i)	
					Figure	Words
1	Site Engineer Planning and billing Engineers (Full duration of the project)	BE/Diploma in Electrical Engineering	5 years	1	30000	Thirty thousand only

Note:

1. Assistant Engineers retired from Government services who are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 years' relevant experience with a reputed construction company can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

2. The contractor shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form -16 or CPF deduction issued to the Engineers employed by him) along with every account bill/final bill and shall produce evidence if at any times so required by the Engineer-in-charge.
3. The CV of technical persons shall be presented to Engineer in charge before deployment in above work for approval. Once inducted they will not be transferred or removed without the permission on Engineer in Charge. Exempted

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER) PUNE

VOLUME II

SPECIAL CONDITIONS OF CONTRACT

&

PARTICULAR SPECIFICATIONS

Name of work &Location: Electrification of Campus Street light at IISER Pune

NIT NUMBER: 73/ IISER/PUNE/2019-2020

Bids to be submitted online on: (URL:https://eprocure.gov.in/eprocure/app

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SPECIAL CONDITIONS OF CONTRACT

A) Civil Works:

1 GENERAL

These special conditions supplement the General Conditions of Contract and shall be considered as part of the contract document. Where these special instructions are at variance with the corresponding conditions, stipulations, and specifications elsewhere in the tender document, these special instructions shall prevail.

1.1 Specifications & Order of preference:

1.1.1 Except for the items, for which Technical/Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the "CPWD Specifications 2009 Vol. I & II" with up to date correction slips, CPWD standard specification for internal Electrical works – 2013, external electrical services- 2007, DG set & Wet riser, sprinkler, specification-2006, Substation works Part IV-2013 additional / Particular Specifications, Architectural / structural drawings and as per instructions of Engineer-in-Charge.

1.1.2 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scaled dimensions.

1.1.3 If there is any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed :

(i) Description of items as given in Schedule of Quantities.

(ii) Particular Specifications, Special Conditions and Additional conditions, if any.

(iii) Drawings

(iv) CPWD Specifications

(v) General conditions of contract for CPWD works

(vi) Indian Standard Specifications of B.I.S.

(vii) Manufacturers' specifications & as decided by Engineer-in-charge.

(viii) Sound Engineering practices.

"In the event of any variation/ discrepancy in the drawings, specifications and

Tender documents etc. the decision of the Engineer-in-charge shall be final binding and conclusive on the contractor and in the case the contractor have any doubt and the same should be got clarified immediately from the Engineer-in-charge and no claim of the contractor shall be entertained thereafter. Moreover, the agency is not allowed to take benefit out of any clerical/ grammatical mistake in the standard clauses/Schedule of Quantities/Specifications etc. being used in the agreement".

1.1.4 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The Contractor shall keep at his own cost all such publications including relevant Indian Standard Codes applicable to the work at site.

1.2 **Scope:**

1.2.1 The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

1.2.2 The works to be undertaken by the contractor shall inter alia include the following:
Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
Obtaining of Statutory permissions wherever applicable and required. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
Warranty obligation for the equipment and/or fittings/fixtures supplied by the contractor.

1.2.3 Contractor shall provide all the shop drawings or layout drawings for all the coordinated services Before starting any work or placing any order for any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-charge prior to delivery of material at site.

1.2.4 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be Properly tested as per the design conditions before covering and their measurements in computerized measurement book duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.

1.3 Deployment of Technical staff & skilled labor:

1.3.1 The quality of work is of paramount importance. Contractor shall have to engage well experienced Skilled labour and deploy modern T&P and other equipment to execute the work to provide the desired quality.

The Contractor shall depute Site Engineer & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision making powers shall be available to the representatives of the contractor at site itself to avoid any likely delays on this account. The contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit. The Project Manager of the contractor having minimum twenty years of experience in similar nature of work along with all technical staff as mentioned in the clause 36 of the GCC, shall always be available at the site during execution of work.

1.4 Removal of Machinery, Tools & Equipment:

1.4.1 Removal of machinery, tools & equipment shall be allowed to be moved away from the site only when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.

1.5 Soil conditions of site:

1.5.1 Contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. No claim whatsoever on account of any discrepancy between the sub-surface strata conditions that may be actually encountered at the time of execution of the work and those given in soil report, in-accuracy or interpretation thereof shall be entertained from the Contractor under any circumstances. The ground water table is in variable condition and the information given in the report is only indicative and it may vary from time to time.

1.6 Site condition:

1.6.1 The tenderer shall acquaint himself with the site of work and see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost.

1.7 Precautionary measures:

1.7.1 Temporary barricading with pre coated G I sheets and steel supporting frame work shall be provided at Site by the contractor at their own cost. The barricading physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accident and also not causing any inconvenience to the traffic. The barricading panels shall be painted and "IISER PUNE" mark should be made in suitable size, shapes and number as directed by Engineer-in-charge without any extra cost. It shall be dismantled and taken away by the contractor after completion of the work at his own cost with the permission of Engineer-in-charge.

1.7.2 Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost. The contractor shall take all precautions to prevent his workmen and employees from removing and damaging any Flora (plant/vegetation) from the campus/site.

1.7.3 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to work due to negligence on his part. No hindrances shall be caused to traffic, during the execution of the work. In case of any accident of the labourers/ contractual staff, the entire responsibility will rest on the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.

1.7.4 The contractor, his authorized representative, workmen etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.

1.7.5 The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general .The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely

to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get firsthand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

1.8 General cleanliness of the site and Stacking & Storage of Materials:

1.8.1 The site of work shall be always kept clean in general strictly adhering to approved job layout and green building parameters. The Contractor shall take all care to prevent any water- logging at site. The waste water shall not be allowed to be collected at site. It may be directly pumped into the public drainage system with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from concerned authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

1.8.2 The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc. are to be constructed.

1.8.3 For construction works which are likely to generate malba / rubbish, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the notified/specified dumping ground and under no circumstances these shall be stacked / dumped even temporarily, outside the construction premises.

1.8.4 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.

1.9 Lab Equipment:

The contractor shall provide at his own cost suitable weighing, surveying and levelling and measuring arrangements as may be necessary at site for checking. All such equipment shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account. A site laboratory with the minimum equipment as specified in NIT shall be established, made functional and maintained within 21 days from the award of the work without any extra cost to the IISER PUNE.

1.10 Setting Out

1.10.1 The contractor shall establish, maintain and assume responsibility for grades, lines, levels and bench marks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions to the Engineer-in-Charge before commencing work. Commencement of work shall be regarded as the contractor's acceptance of such grades, lines, levels and dimensions and no claim shall be entertained at a later date for any errors found.

1.10.2 In order to set the alignment of buildings / foundations and to mark the same on the ground, the agency is to adopt “total station” surveying method. The agency is to engage a well versed and well experienced surveyor in “total station” survey. Nothing extra for this total station survey is payable

If at any time, any error in the respect of setting out appears during the progress of the work, the contractor shall, at his own expense rectify such error if so required, to the satisfaction of the Engineer-in-Charge.

Though the site levels are indicated in the drawings, the contractor shall ascertain himself and confirm the site levels with respect to GTS bench mark from the concerned authorities. The contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of the work. These bench marks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account.

The approval by the Engineer-in-Charge, of the setting out by the contractor, shall not relieve the contractor of any of his responsibilities and obligation to rectify the errors/defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

1.10.3 The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the contractor at his own cost to the instructions and satisfaction of the Engineer-in-Charge.

1.10.4 The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of building in consultation with the Engineer-in-Charge & proceed further. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and centre lines, etc., along with theodolites. Nothing extra shall be payable on this account.

1.10.5 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.

1.11 Temporary Water, Electricity & Telephone Connections:

1.11.1The contractor shall make his own arrangements for water including boring of tube wells etc. if necessary and for Electricity by obtaining electric connections and by providing diesel generators of adequate capacity if required and make necessary payments directly to the State Govt. IISER PUNEs concerned. Necessary approval shall be taken by the contractor from the ground water IISER PUNE for boring of tube wells. Nothing extra shall be paid on these accounts. Contractor shall

get the water tested from laboratory approved by the Engineer-in-charge at regular interval as per the CPWD Specifications 2009. All expenses towards collection of samples, packing, transportation except testing charges etc. shall be borne by the contractor. The contractor shall obtain environmental and pollution clearance for the diesel generators. Nothing extra shall be paid on this account.

1.11.2 The Contractor shall arrange electricity at his own cost for testing of the various electrical installations as directed by Engineer-in-Charge and for the consumption by the contractor for executing the work. Also all the water required for testing various electrical installations, fire pumps, wet riser / firefighting equipment, fire sprinklers etc. and also testing water supply, sanitary and drainage lines,

water proofing of underground sump, overhead tanks, water proofing treatment etc. shall be arranged by the contractor at his own cost. Nothing extra shall be payable on this account.

1.11.3 Arrangement of temporary telephone connection, water and electricity required by Contractor, shall be made by him at his own cost and also necessary permissions shall be obtained by him directly from concerned authorities, under intimation to the IISER PUNE. Also, all initial cost and running charges, and security deposit, if any, in this regard shall be borne by him. The Contractor shall abide by all the rules/ bye laws applicable in this regard and he shall be solely responsible for any penalty on account of violation of any of the rules / byelaws in this regard. Nothing extra shall be payable on this account.

1.11.4 The Contractor shall be responsible for maintenance and watch and ward of the complete installation and water / electricity meter and shall also be responsible for any pilferage, theft, damage, penalty etc. in this regard. The Contractor shall indemnify the IISER PUNE against any claim arising out of pilferage, theft, damage, penalty etc. whatsoever on this account. Security deposit for the work shall be released only after No Dues Certificates are obtained from the local Authorities from whom temporary electric/ water / telephone connection have been obtained by the Contractor. Nothing extra shall be payable on this account.

1.11.5 The IISER PUNE shall in no way be responsible for either any delay in getting electric and/or water and/or telephone connections for carrying out the work or not getting connections at all. No claim of delay or any other kind, whatsoever, on this account shall be entertained from the Contractor. Also contingency arrangement of stand-by water & electrical supply shall be made by the Contractor commencement and smooth progress of the work so that work does not suffer on account of power failure or disconnection or not getting connection at all. No claim of any kind whatsoever shall be entertained on this account from the Contractor. Nothing extra shall be payable on this account.

1.12 Architectural and structural Drawings:

1.12.1 Although architectural drawings are uploaded in the web along with NIT for reference to the bidder or made available in the office of Engineer in Charge, IISER PUNE, drawing shall be issued for construction by the IISER Pune appointed architectural consultant as per the progress at site of work /stages of construction. Unless non issue of any drawing /details is directly related to

hindrance in the progress of work, claim of hindrance shall not be admissible. Engineer in charge decision in this regard shall be final & binding on the contractor.

1.12.2 The information and site data shown in the drawings and mentioned herein and also elsewhere in the tender documents are being furnished for general information and guidance only. IISER PUNE shall not bear responsibility for lack of such knowledge and also the consequences thereof. The Engineer-in-charge in no case shall be held responsible for the accuracy thereof or any interpretation/ or conclusions drawn there from by the contractor.

1.13 Scaffolding & Staging:

1.13.1 Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the contractor. The scaffolding shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. Single scaffolding system is strictly prohibited and shall invite necessary action. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

1.13.2 The contractor should submit the shop drawings of staging and shuttering for approval of Engineer-in-Charge before actually commencing the execution of work under the item. Nothing extra shall be payable on this account.

1.14 Co-ordination with other agencies:

1.14.1 The Contractor shall conduct his work so as not to interfere with or hinder the progress of the work being performed by other Contractors or by the Engineer-in-Charge. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence.

1.14.2 Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

1.14.3 The Contractor shall cooperate with and provide the facilities to the associate-Contractors and other agencies working at site for smooth execution of the work. The Contractor shall --

Allow use of scaffolding already erected, toilets, sheds etc.
Properly co-ordinate their work with the work of other Contractors.
Provide control lines and benchmarks to his associate-Contractors and the other

Contractors.
Provide electricity and water at mutually agreed rates.
Provide hoist and crane facilities for lifting material at mutually agreed rates.
Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
Adjust work schedule and site activities in consultation with the Engineer-in Charge and other Contractors to suit the overall schedule completion. Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator. The contractor shall indemnify the IISER PUNE against any claim(s) arising out of such disputes.

1.15 Procurement of materials:

1.15.1 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

1.15.2 The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and approval of the same before use in the work.

1.16 Protection of Existing Services & buildings and Materials:

1.16.1 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.

1.16.2 In case the existing services are to be shifted permanently, then before dismantling the existing services, alternate/diversion of service lines has to be laid by the contractor so that there is no interruption in use of existing services. The contractor has to plan the alternate suitable route for diversion/shifting of service lines and get the same approved from the Engineer-in-Charge before starting shifting of services. Nothing extra shall be paid except the payment of dismantling and laying of new service lines as per conditions of contract.

1.16.3 All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on project location during excavation/construction shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precaution to prevent his workmen or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal acquaint the Engineer-in-charge of such discovery and carry out the official instructions of Engineer-in-charge for dealing with the same, till then all work shall be carried out in a way so as not to disturb/ damage such article or thing.

1.16.4 The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to IISER PUNE. No extra payment shall be made on this account.

1.16.5 The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.

1.17 Rates and other conditions for payment:

The rates quoted by the Contractor are deemed to be inclusive of the following--

1.17.1 site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, welfare & training measures, preparatory works, working during monsoon, working at all depths, height, lead, lift and location etc. until / unless specified otherwise, implementation of green building norms to achieve desired GRIHA (5 star) Rating etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account.

1.17.2 For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do it and nothing extra shall be paid except otherwise provided in the items of schedule of quantities.

1.17.3 Any legal or financial implications resulting out of disposal of earth shall be sole responsibility of the contractor. Nothing extra over the schedule shall be paid on this account.

1.17.4 All labour, material, tools and plants and other inputs involved in the execution of the item.

1.17.5 Providing sunk flooring in bath-rooms, kitchen, etc.

1.17.6 Performance test of the entire installation(s) before the work is finally accepted.

1.17.7 Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.

1.17.8 The percentage quoted by the tenderer, shall be inclusive of all taxes including GST and levies applicable in respect of this contract shall be payable by the contractor and Government will not entertain any claim whatsoever in respect of the same.

1.17.9 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and

other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

1.17.10 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules regulations and bye-laws laid down by Collector / MC etc. and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. It is clarified that the extra sewerage charges (one time charges for commencement of work) required to be paid to the Municipal Corporation / other statutory bodies shall be paid by the IISER PUNE and need not be considered by the contractor. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. All statutory taxes, levies, charges (including GST, water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and obtain all requisite licenses wherever required and shall pay to such authority all the fees that are required to be paid for the execution of work. He shall protect and indemnify the IISER PUNE and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the IISER PUNE.

1.17.11 Royalty at the prevalent rates shall have to be paid by the contractor (Rates of Seigniorage fee enclosed in the document is for guidance only and no claims shall be entertained on account of this) on all the boulders, stone aggregate, brick aggregate, shingle, coarse or fine sand, earth, gravel, bajri etc. collected by him for the execution of the work, directly to the Revenue Authority or authorized agent of the State Government concerned or Central Government.

Royalty at the prevalent rates shall be paid by the contractor or the RMC supplier as per the terms of supply between them, on all materials such as stone aggregate, coarse or fine sand etc. collected by him for the execution of the work, directly to the revenue authority of the State Government concerned. Further, contractor needs to submit proof of submission of full royalty to the State Government or local authority. Nothing extra shall be payable on this account.

1.17.12 All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, barricading, testing facilities /

laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.

1.17.13 The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the IISER PUNE from any and all damages and claims that may arise on any account. The Contractor shall indemnify the IISER PUNE against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the IISER PUNE in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

1.17.14 The Contractor shall make all necessary arrangements for protecting from rain or likewise extreme weather conditions, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account. Also, no claims for hindrance shall be entertained on this account.

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

1.17.16 No payment shall be made for any damage caused by fire, rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him. The contractor shall maintain all the work in good condition at his own cost till the completion of the entire work.

1.17.17 In case the same item appears more than once in the schedule of work under the same sub head or among the different sub heads of works, the lowest rate quoted for that item shall be taken for other items also and tender will be evaluated accordingly.

1.17.18 The ESI and EPF contribution on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of employer paid by the contractor shall be reimbursed by the Engineer in charge to the contractor on actual basis. The applicable and eligible

amount of EPF& ESI shall be reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment which are in order.

1.17.19 Quoted Rates shall be inclusive of GST applicable.

1.18 Foreign Exchange:

1.18.1 No foreign exchange shall be made available by the IISER PUNE for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items if required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

1.181.2 The contractors have to quote the corresponding imported items in "Indian Rupees" in the Schedule of Quantities which shall include all incidental charges including freight, taxes including GST, import duties, fluctuations in currency rates. No extra payment will be made over and above the quoted rates.

1.19 Tools & Plant:

1.19.1 No tools and plants including any special T&P etc. shall be supplied by the IISER PUNE and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

1.20 Horticultural works:

1.20.1 Horticultural activities, tree plantation, Nursery plantation shall be taken up in the campus along with constructional activities, as such, care shall be taken to avoid damages to these including existing trees, recently planted trees including tree guards and irrigation water supply piping system. Hence, while taking up excavation activities, trees as well as their root zones be protected and the stacking of excavated earth shall be made in such a way that neither plants are buried nor damaged. The initial survey, demarcation of roads and various buildings, sub grade of roads have been made in the campus which shall not be disturbed or damaged by vehicular movement or manual tampering; else the same shall be made good by the contractor at his own cost. In case of failure to comply with the above requirements the damage caused shall be made good at cost of contractor and the cost so incurred and assessed by Engineer in charge shall be recovered from running account bill of contractor.

1.21 As Built & Service Drawings:

1.21.1 The contractor shall submit completion plan (4 sets) as required vide General Specifications for Electrical works including all services as applicable within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum of 0.1 % of Tendered Value or Rs. 25,000/- whichever is more as may be fixed by the Engineer in charge concerned and in this respect the decision of the Engineer in charge shall be final and binding on the contractor.

The contractor shall submit completion plans for Internal and External Civil, Electrical and Mechanical Services within thirty days of the completion of the work, provided that the service plans having been issued for execution by the Engineer-in-Charge, unless the contractor, by virtue of any other provision in the contract, is required to prepare such plans.

1.22 Computerized MBs & SMBs:

1.22.1 The contractor shall make available four (04) sets of computerized Standard Measurement Books (SMBs) having measurement of all the permanent standing in a building.

1.22.2 The contractor will submit computerized measurement sheet for the work carried out by him for making payment as per Clause – 6A of the General Conditions of Contract. For casting of RCC members and other hidden items the corrected and duly test checked measurement sheets of reinforcement or that of other hidden items shall be deposited with Engineer in charge or his authorized representative, before casting of RCC or other hidden items. The delay in submission of corrected and duly checked measurement sheet may, therefore, delay casting of RCC or execution of hidden item for which no hindrance shall be recorded.

1.22.3 At any time, electronic measurement book may also be introduced. The contractor shall comply with the same as per the direction of Engineer-in-charge.

1.23 Water Supply & Sanitary Installations & Testing:

1.23.1 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to approved manufacturers specifications where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested from approved labs wherever required at his own cost. The contractor shall submit for the approval of the Engineer-in-Charge, the name of the plumbing agency (along with their working experience in recent past) proposed to be engaged by him.

1.23.2 The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

2.0 RECORDING OF HINDRANCES:-

2.1 Whenever any hindrance whether on part of IISER PUNE or on part of contractor, comes to the notice of the PMC/Engineer in charge representative, he should at once make a note of such hindrance in the register kept at site, and immediately make a report to the Engineer in Charge within a week.

2.2 Each hindrance should be entered in the Hindrance Register, which should be authenticated by the Engineer in Charge and Contractor. The Engineer in charge shall review the Hindrance Register at least once in a month.

2.3 The hindrances on part of contractor are also to be entered in the Hindrance Register.

2.4 The hindrance register shall be submitted at the time of payment of each Running Account Bill.

3.0 SECRECY

3.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have noticed that the Indian Official Secrets Act 1923 applies to them & will continue so to apply even after the execution of such works under the contract.

3.2 The contract is confidential and must be strictly confined to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers as necessary) and to the purpose of the contract.

3.3 All documents, copies thereof & extracts there from furnished to the contractor shall be returned to the Engineer-in-Charge on the completion of the work / works or the earlier determination of the contract.

4.0 LABOUR AND SECURITY

4.1 In the event of the contractor(s) committing a default or breach of any of the provisions of the Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and' Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Government a sum not exceeding Rs.200/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.200/- per day for each day of default subject to a maximum of 5 per cent of the estimated cost of the work put to tender. The decision of the Engineer-in-Charge shall be final and binding on the parties.

No payment shall be made for construction of labour housing. No land shall be made available for labour housing in the IISER Pune campus.

4.2 The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works, at his site office.

4.3 Contractor should provide his plan for labour huts as per his requirement and get it approved from the Engineer-in-Charge. The contractor will be provided space for labour huts etc. inside the campus but the space requirement and location, as assessed by Engineer-in-Charge shall be final and binding.

4.4 If as per the rules of the local authority, the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide such accommodation as is acceptable to local bodies and nothing extra shall be paid on this account.

4.5 Contractor has to follow the security requirement of the campus and obtain necessary entry passes for the labour and vehicles and follow security checks at entry / exit gates, restriction on movement of vehicle, restricted timings of working etc. The IISER PUNE however shall assist the contractor in obtaining such passes for movement of vehicles and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour including restrictions in working hours, if there is any.

4.6 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. The contractor shall, on demand submit list of his agents, employees and work people concerned & shall satisfy as to the bonafides of such people.

4.7 The contractor & his work people shall observe all relevant rules regarding security promulgated in which work is to be carried out by the Controlling Administrative Authority of the campus/area (hereinafter referred to as “Administrator”).

4.8 The contractor, his representative, workman shall be allowed to enter through specified gates & timing as laid down by the controlling authority. They shall be issued an identity card or an individual pass in accordance with the standing rules regulations & they should possess the same while working. The contractor shall be responsible for the conduct & actions of his workmen, agents/ representatives.

4.9 Normally contractor shall be allowed to carry out work between 7 AM to 6 00 PM. However, he may also be allowed to carry out the work beyond 6 00 PM & up to 10 30 PM if the site conditions / circumstances so demand with prior written permission from the “Engineer in charge”. However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.

4.10 Normally contractor’s material / vehicles etc. shall be allowed to move in / go-out between 7 AM to 7 PM only & no movement of material / vehicles out of site of work shall be allowed during night hours unless specific permission is obtained from the “Engineer in charge”.

4.11 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the IISER PUNE.

4.12 In the event of any restrictions being imposed by the Chief Security Officer, IISER PUNE, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required. Nothing extra shall be payable on this account.

5.0 OFFICE INFRASTRUCTURE:

5.1 For Quality Control Measures, Preparation of Bills and Monitoring the Quality, the contractor shall provide one Computer having Intel core i 5 3rd generation processor, MS-Windows-7, A-3 Coloured Inkjet & A-4 Laser jet Printers, Scanners, UPS etc. with data entry operator in the site office of Engineer-in-Charge.

5.2 The contractor shall make arrangement for Helmets and leather shoes (meant of construction work at sites) for all field staff of the IISER PUNE during the entire period of construction for safety reasons. One helmet and two pairs of shoes per staff member (maximum twenty members) of the IISER PUNEs per year shall be arranged by the contractor.

6.0 DOCUMENTATION

The Contractor shall render all help and assistance in documenting the total sequences of this project by way of photography, slides, audio / video recording & other records etc. Nothing extra shall be payable to Contractor on this account. However, cost of photographs, slides, audio / video graph etc. shall be borne by the IISER PUNE. The original films shall be the property of the IISER PUNE. No copy shall be prepared without the prior approval of the Engineer- in – Charge.

7.0 PROGRESS CHART: -

7.1 The contractor shall submit a Time and Progress Chart for each mile stone. The

Engineer-in-charge may within 30 days thereafter, if required modify, and communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in-charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates by which these details are required by contractor without causing any delay in execution of the work. The chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-charge and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in Schedule ‘C’.

7.2 In case of non-submission of construction programme by the contractor the program approved by the Engineer-in-charge shall be deemed to be final.

7.3 The approval by the Engineer-in-charge of such programme shall not relieve the contractor of any of the obligations under the contract.

7.4 The contractor shall submit the Time and Progress Chart and progress report using the mutually agreed software or in other format decided by Engineer-in-charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery Rs. 2500/- (for works costing up to Rs. 20 Crores) / Rs. 5000/- (for works costing more than Rs.20 Crores) shall be made on per week or part basis in case of delay in submission of the monthly progress report.

7.5 The program chart should include the following: -
Descriptive note explaining sequence of various activities.
BAR CHARTS prepared in mutually agreed software or in other format decided by Engineer-in-charge which will indicate resources in financial terms, manpower and specialized equipment for every important stage.

Program for procurement of materials by the contractor.

Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.

Program of procurement of machinery / equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition, to the above to achieve the progress of work as per program, the contractor must bring at site adequate shuttering material required for cement concrete and RCC works etc. The contractor shall submit shuttering schedule adequate to complete the structure work within the laid down physical milestones.
Program for achieving milestones.

7.6 The submission for approval by the Engineer-in-charge of such programme or such particulars shall not relieve the contractor of any of the duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-charge to take action against the contractor as per terms and conditions of the agreement.

8.0 PROGRESS AND MONITORING OF WORK:

8.1 The progress report shall contain the following, apart from whatever else may be required as specified:-
Construction schedule of the various components of the work through a bar chart for the next three months (or as may be specified), showing the micro milestones, targeted tasks and up to date progress. At least 10 digital photographs showing all the parts of construction site along with at least 5 minutes video of executions of different items in soft copy has to be submitted in every monthly progress report.

Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative up to the month, with reason for deviations, if any in a tabular format.

Plant and machinery statement, indicating those deployed in the work.

Man-power statement, indicating individually the names of all the staff deployed on the work, along with their designations. Number of skilled workers and unskilled workers deployed on the work and their location of deployment.

Financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of cheque payment received, extra /substituted /deviations items if any, etc.

8.2 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

8.3 The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. Wherever absolutely essential, the chase shall be cut using chase cutting machines. Chases will not be allowed to be cut using hammer / chisel. The electrical boxes should be fixed in walls simultaneously while raising the brick work. The contractor shall ensure proper co-ordination of various disciplines viz. building works, sanitary & water supply & electrical installations etc.

8.4 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose of the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-charge.

8.5 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted / removed from site without the permission of the Engineer-in-Charge.

8.6 All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

9.0 PROJECT REVIEW MEETINGS:

The contractor, immediately on award of work shall submit details of his key personnel to be engaged for the work at site. In addition, he shall furnish the Engineer-in-charge detailed organization involved with the work.

The contractor shall present the programme and status at various review meetings as required.

Monthly Review Meetings: Shall be attended by Project - in - charge and the Management Representative who can take independent decisions along with IISER PUNE, client's representatives.

Agenda
Progress Status/Statistics.

Completion Outlook.

Major hold ups/slippages.

Assistance required.

Critical issues.

Any decision on queries raised either by Contractor/PMC.

Anticipated cash flow requirement for next two months.

10.0 ENGAGING SPECIALISED AGENCIES FOR WORKS: -

10.1 The Contractor shall engage specialized agencies having adequate technical capability and experience of having executed at least one work of similar items for executing the following items of the work and/or any other items of work where specialized firm is required to be engaged as per contract conditions.

Water proofing treatment work of all types.
Aluminium Work- structural glazing works
Granite flooring/wall lining.
Stainless steel railing.
All types of false ceilings

10.2 The Specialized agency for the work shall be got approved from the Engineer-in-Charge well before actual commencement of the item of work. The contractor shall submit the list of specialized agencies proposed to be engaged by him along with their technical capability and necessary performance certificates, within 30 days of the stipulated date of start to substantiate technical capability and experience of the agency for prior approval of the Engineer-in-Charge.

10.3 It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialized Agencies without any time & cost overrun to the IISER PUNE. The main contractor shall be solely responsible for settling any dispute / litigation arising out of his agreement with the Specialized Agencies. The contractor shall ensure that the work shall not suffer on account of litigation/ dispute between him and the specialized agencies / sub-contractor(s). No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialized Agencies.

DEFECT LIABILITY PERIOD (REFUND OF SECURITY DEPOSIT) :

11.1 The defect liability / maintenance period shall be 12 months after the date of completion of work for this contract agreement. The Security Deposit shall be released after the defect liability period of 12 months after completion of work and for this, the contractor shall have to produce a certificate stating that no defects are pending for rectification from the Engineer-in-charge, but subject to other provisions specified elsewhere in the contract agreement.

12.0 SAFETY MEASURES

12.1 The issue of construction safety & standards has gained utmost importance in recent times. This subject is to be dealt with in an integrated manner with an approach to developing and establishing a safety culture at work sites. Broadly, its components are:
Creating awareness.
Education.
Training.
Implementation.
Enforcement measures.

All workers of contractor and associate agencies, invariably and at all the times, must follow all safety norms, adopt safe construction practices and use all required safety gadgets in their working throughout the project duration.

12.2 The contractor shall issue *Photo Identity Cards* with unique numbers containing salient information of workers for the labour & his staff.

12.3 The Contractor shall monitor and achieve the objectives of construction safety continuously, progressively and through affirmative action, and shall oversee implementation of safety program over the entire construction period.

12.4 Warning / Caution Boards

All temporary warning / caution boards / glow signage display such as “Construction Work in Progress”, “Keep Away”, “No Parking”, Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

12.5 Sign Boards

12.5.1 The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, IISER PUNE etc. besides providing space for names of other Contractors, Associate contractors and specialized agencies. Nothing extra shall be payable on this account.

12.5.2 A display board shall be kept at site which would list the names of workers, teams and agencies following safety program in the best manner. This would be updated weekly.

12.5.3 Necessary protective and safety equipment shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and used at site.

12.5.4 No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

13.0 SPECIAL CONDITION FOR HARDWARE AND SANITARY WARES:

13.1 Engineer-in-Charge will take a decision regarding model numbers of equivalent Door/window hard ware/ sanitary ware at the time of execution, in case the material, from the manufacturer whose model number is mentioned, is not available. However, in case, the equivalent model so approved, is cheaper than the model already mentioned in item/approved makes list, the price adjustment will be made based on the difference in market rate. In case, the rate of subsequently approved model is more, no extra payment will be made on this account.”

13.2 The following procedure should be followed in case of removal of rejected/sub-standard materials from the site of work.

Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the site order book under the signature of the PMC giving approximate quantity of such materials.

As soon as the material is removed, a certificate to that effect may be recorded by the PMC against the original entry, giving the date of removal, mode of removal i.e. whether by truck, carts or by manual labour. If removal is by truck, the registration number of the truck should be recorded.

14.0 MOBILIZATION ADVANCE:

Before any installment of advance is released, the contractor shall execute a bank guarantee bonds not more than 6 in number from the scheduled bank for the amount equal to 110% of the amount of advance and valid for the period till recovery of advance. This (bank guarantee from scheduled bank for the amount equal to 110% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.

15.0 INSPECTION OF WORKS:

15.1 In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the Director, IISER PUNE, and other senior officers of IISER PUNE in addition of the Engineer-in-charge, his authorized representatives, Authorities and Team of Third Party Quality Assurance engaged for the work. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

15.2 The committee/consultant appointed by IISER PUNE, shall be inspecting the works including workshops and fabrication factory to ensure that the works in general being executed according to the design, drawings and specifications laid down in the contract. Their observations shall be communicated by IISER PUNE engineering staff and compliance is to be reported to IISER PUNE. The committee/consultant appointed by IISER PUNE shall certify on completion of particular building that it has been constructed according to the approved drawings design and specifications.

15.3 Senior Officers of IISER PUNE, Dignitaries from Central Ministry / IISER PUNE, State Government and IISER PUNE Authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing:-

Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.

Entrance and area surrounding to be kept cleaned.

Display layout plan key plan, Building drawings including plans, elevations and sections.
Up to date displays of programme chart (Bar charts) in MS PROJECT etc.

Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
Keep plastic / cloth mounted one sets of building drawings.
Set of Helmets and safety shoes for safety.

16.0 INSURANCE POLICIES:

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge proper Contractor All Risk Insurance Policy for an amount equivalent to the contract amount for this work, with Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the IISER PUNE from any liability during the execution of the work. Further, he shall obtain and submit to the Engineer-in-Charge, a third party insurance policy for maximum Rs.10 lakh for each accident, with the Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that Insurance Policies are also taken for the workers of his Sub-Contractors / specialized agencies also. The contractor including subcontractors shall provide comprehensive group insurance cover for all the workers and their supervisory staff deployed at site. The details of insurance cover to be provided shall be submitted by the contractor / associate agencies within 20 days of date of start. In case of a default, appropriate policy shall be got done by the safety monitoring committee and double the fee of the policy shall be recovered from the next bill of the contractor. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 15 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the IISER PUNE giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

17.0 APPLICABLE PERMITS:

17.1 The contractor(s) shall give to the Municipality, police and other authorities all necessary notices etc. that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures etc. and pay all fee, taxes including GST and charges which may be levied on account of these operations in executing the contract. He shall make good any damage to the adjoining property

whether public or private and shall supply and maintain lights either for illumination or for cautioning the public at night.

17.2 The contractor shall ensure that applicable permits mandated by the local bodies and in case warranted for this work are obtained as required under the Applicable Laws.

18.0 LOCAL BYE-LAWS:

18.1 The building work shall be carried out in the manner complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra shall be paid on this account.

18.2 Some restrictions may be imposed by the local police etc. on the working time and for movement of labour, materials etc. the contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on this account.

18.3 The contractor shall not stack building material/ malba on the road or on the land owned by any other authority, as the case may be. In case, the Contractor is found stacking the building material/ malba as stated above, he shall be liable to pay the stacking charges as may be levied by local body or authority and also to face penal action as per the rules, regulations and bye-laws of the said body or authority. The Engineer-in-Charge shall be at liberty to recover the sums due but not paid to the concerned authorities on the above counts from any sums due to the contractor including amount of the Security Deposit or Retention Money in respect of this contract or any other contract.

19.0 FINAL TESTING OF THE INSTALLATION:

The Contractor shall demonstrate trouble free functioning of all the Civil and E & installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

20.0 OCCUPATION CERTIFICATE:

The contractor shall coordinate and facilitate IISER PUNE for obtaining occupation certificate/completion certificate from local bodies if required including getting the required site visits conducted by such authorities with a view to obtain the same.

ADDITIONAL CONDITIONS (Civil Component)

1.0 QUALITY ASSURANCE/TESTING OF MATERIALS: -

1.1.1 Water tanks, taps, sanitary, water supply & drainage pipes, fittings & accessories should conform to bye-laws of local body/corporation, where CPWD specifications are not available. The Contractor (s) should engage approved, licensed plumbers for the work and get the materials (fixtures/fittings) tested, by the municipal Body/Corporation authorities wherever required at his own cost. The Contractor shall submit for the approval of the Engineer-in-Charge, the name of the plumbing agency (along with their working experience in recent past) proposed to be engaged by him.

1.1.2 With each Running Bill, the details of test carried out shall be submitted by the contractor as per Performa given in the tender document.

1.1.3 Samples of materials required for testing shall be provided free of charge by the contractor. The contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight / dimension as may be necessary. The sealed samples are to be handed over to the testing lab by the contractor in the presence of representative of Engineering in charge. The cost of other than steel & Ultrasonic pulse velocity tests, to be carried out in approved labs shall be borne by the contractor i/c All other expenditure required to be incurred for taking samples; conveyance, packing etc. shall be borne by the contractor himself.

1.1.4 The Contractor shall at his own risk and cost make all arrangements and shall provide all such facilities including material and labour, the Engineer-in-Charge may require for collecting, preparing, forwarding the required number of samples for testing as per the frequency of test stipulated in the contract specifications or as considered necessary by the Engineer-in-Charge, at such time and to such places, as directed by the Engineer-in-Charge. Nothing extra shall be payable for the above.

1.1.5 The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor .The Contractor or his authorized representative shall remain in contact with the Engineer-in–Charge or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained from the Contractor.

1.1.6 Maintenance of Register of Tests:-

All the registers of tests carried out a Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.

All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by representative of the Engineer in Charge. All the assistance shall be provided by the contractor. Cost of

sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site.

All the test in field lab setup at Construction Site shall be carried out by the Engineering Staff deployed by the contractor which shall be 100% witnessed by representative of the Engineer in Charge.

All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by Engineer in Charge or his representative.

Contractor shall be responsible for safe custody of all the test registers.

1.1.7 Extensive testing of the materials used for construction is a pre-requisite for attaining high quality of the work. This shall also require specialized tests, physical, chemical, ultrasonic, x-ray and various other types of tests which cannot possibly be carried out in a site laboratory. These tests also require specialized personnel who regularly deal in such testing. Therefore the need arises for carrying out the tests in outside laboratories. These laboratories may be in the Govt. sector, Semi Govt. or Private sector. All Govt. Institutes, Indian Institute of Technology, National Institute of Technology, Central and State funded laboratories stands approved. No approval is required for testing in these laboratories/institutes. However, the outside private laboratories shall be approved in the following manner:-

The Engineer in charge will approve the private lab irrespective of distance for tests accredited by NABL or any other similarly placed accrediting government body which operates in accordance with ISO/IEC 17011 and acridities labs as per ISO/IEC 17025.

A lab will have to submit details of space available, equipment, staff (Technical and Non-Technical), accreditation and approval from various IISER PUNE/institutes. Lab must be NABL approved.

Initial approval of lab should for one year and can be revalidated for further one year and so on.

Every lab will be audited for maintenance and calibration of equipment and employment of staff prior to approval/revalidation.

However, testing of material in any Govt., Lab / Public Undertaking Lab / IIT or NIT Lab / Govt. Engineering College may be allowed by Engineer in Charge.

1.1.8 Ultrasonic pulse velocity test shall be conducted on at least 5% of the total number of RCC members in each category i.e. beam, column, slab and footing for ensuring quality of concrete as per directions of Engineer- in charge. The cost of the same shall be borne by the contractor.

1.1.9 In case there is any discrepancy in frequency of testing as given in list of mandatory tests and that in individual sub-heads of work as per CPWD Specifications higher of the two frequencies of testing shall be followed and nothing extra shall be payable on this account.

1.1.10 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately. If any material, even though approved by Engineer-In-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

1.1.11 In addition to the supervision of work by IISER PUNE Engineers, the Architects deployed by the IISER PUNE, Quality Control/ Assurance Team and Third party Quality Control/ Assurance Team shall also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by IISER PUNE engineers to the contractor. Upon receipt of instructions from Engineer in Charge these are also to be made good by necessary improvement, rectification, replacement up to his complete satisfaction. Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering plates, rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth etc. to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.

1.1.12 The Contractor shall submit, within 15 days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance, of such items of works, as directed by the Engineer-in-Charge. All the materials to be used in the work, to give the finished work complete in all respects, shall comply with the requirements of the specifications and shall pass all the tests required as per specifications as applicable or such specifications / standards as directed by the Engineer-in-Charge. However, keeping the Quality Assurance in mind, the Contractor shall submit, on request from the Engineer-in-Charge, his own Quality Assurance procedures for basic materials and such items, to be followed during the execution of the work, for approval of the Engineer-in-Charge.

1.2 FIELD LABORATORY

The contractor has to establish within 21 days from the award of work a field laboratory at site including all necessary equipment and skilled manpower for the Field Tests as indicated in the tender document at his own cost to have proper quality control. Rs.1,000/-per day shall be recovered from the contractor for any delay beyond the specified period. If contractor fails to establish lab within additional period of 15 days, the Engineer in charge shall initiate action as deemed fit under relevant clauses of the agreement.

For performing the above tests, the Field Testing Equipment and Instruments as indicated in the tender document are to be arranged and maintained by the contractor at his own cost.

1.2.1 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately.

1.2.2 The list of Laboratory/ Field equipment referred above is to be arranged and maintained by the contractor at the site of work. In case the equipment required for any test is not available at site, the IISER PUNE shall get the test conducted from the third party. However in that event, besides providing free materials of sample, the cost of taking of sample, packing, transportation, testing charges etc. shall be borne by the contractor irrespective of the results.

1.3 SAMPLE OF MATERIALS:-

1.3.1 All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand / quality of material are not specified in the item of work, the contractor shall submit the samples as per List of Approved Makes given in the tender document for approval of Engineer-in-Charge. For all other items, ISI Marked materials and fittings shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant Specifications or IS codes for the approval of Engineer-in-Charge.

1.3.2 The Contractor shall procure and provide all the materials from the manufacturers

suppliers as per the list attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified make is not available. This is, however, subject to documentary evidence produced by the contactor for non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Nothing extra shall be payable on this account. Also, the material shall be procured only after written approval of the Engineer-in-Charge.

1.3.3 To avoid delay, contractor should submit samples / as stated above well in advance so as to give timely orders for procurement. If any material, even though approved by Engineer-in-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost. Samples including brand / quality of materials and fittings to be used in the work shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.

1.3.4 BIS marked materials except otherwise specified shall also be subjected to quality test besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the contractor shall, furnish manufacturer’s test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfies the provisions of specifications relevant to the material and / or the work done.

BIS marked items (except cement & steel for which separate provisions have been made) required on the work shall be got tested, for only important tests, which govern the quality of the product, as decided by the Engineer-in-Charge. The frequency of such tests (except the mandatory test) shall be 5% of the frequency as specified in BIS. For mandatory test, frequency shall be as specified in the CPWD Specifications.

1.3.5 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications nor BIS, then tests shall be carried out as per directions of Engineer-in-Charge.

2.0 CEMENT & STEEL REINFORCEMENT

2.1 Contractor has to procure Cement and Steel and has to produce manufacturers test certificate and challan for each lot of Cement & Steel Reinforcement procured at site.

2.2 CEMENT:-

2.2.1 The contractor shall procure 43 grade ordinary Portland Cement (OPC) conforming to IS: 8112 / Portland Pozzolona Cement (PPC) conforming to IS: 1489 (Part-1) as required in the work from reputed manufacturers of cement as mentioned in "Approved Makes" or from any other reputed cement manufacture having a production capacity not less than 1 million Ton per annum as approved by Engineer in charge. The cement of approved make as aforesaid in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot shall be procured by the contractor.

Minimum M30 grade of concrete shall be used in all structural elements of RCC, both in load bearing and framed structure.

Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot & arid regions, the minimum curing period shall be 14 days or its equivalent.

2.2.2 Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so. The cost of tests shall be borne by the contractor/IISER PUNE in the manner indicated below:

By the contractor, if the results show that the cement does not conform to relevant BIS Codes.

By the IISER PUNE, if the results show that the cement conforms to relevant BIS Codes.

2.2.3 Cement shall be brought at site in bulk supply of approximately 200 tonnes or as decided by the Engineer-in-Charge.

2.2.4 OPC & PPC bags shall be stored in separate godowns. Separate godowns for tested cement and fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in C.P.W.D Specifications having weather-proof roofs and walls. The size of the cement godown is indicated in the sketches for guidance. The actual size of godown shall be as per site requirements and nothing extra shall be paid for the same. Each godown shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-Charge or his authorized representative of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed proforma and signed daily by the contractor or his authorized agent and Engineer-in-Charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorized representative which shall be duly signed by the authorized representative of the Engineer-in-Charge before issue to the work on day to day basis.

Required number of cement godowns each having capacity as decided by the Engineer-in-Charge shall be constructed by the contractor at site of work for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement go-downs. The contractor shall facilitate the inspection of the cement go-downs by the Engineer-in-Charge at any time.

2.2.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in Clause-42 of the contract and shall be governed by the conditions laid therein.

2.2.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 42), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-Charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor.

For non-scheduled items, the decision of the Engineer in charge, regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.

2.2.7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.

2.2.8 Damaged cement shall be removed from site immediately by the contractor on receipt of notice in writing from the Engineer-in-charge. If he does not do so within three days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

2.2.9 In case the contractor brings surplus quantity of cement the same shall be removed from the site after completion of work by the contractor at his own cost after approval of the Engineer-in-Charge.

2.2.10 Cement, which is not used within 90 days from its date of manufacture, shall be retested at approved laboratory. Until the results of such tests are found satisfactory, it shall not be used on the work.

2.2.11 Compressive Strength of Cement

The average compressive strength of at least three mortar cubes (area of face 50 cm2) composed of one part of cement, three parts of standard sand (conforming to IS 650:1996) by mass and P/4+3.0 percent (of combined mass of cement plus sand) water, and prepared, stored and tested in the manner described in IS 4031 (Part 6): 1988, shall be as follows:

a) 72 ± 1 hour not less than 23 MPa
b) 162 ± 2 hour not less than 33 MPa
c) 672 ± 4 hour not less than 43 MPa

NOTE: - P is the percentage of water required to produce a paste of standard consistency (see as below)

Consistency of Standard Paste:-

The quantity of water required to produce a paste of standard consistency, to be used for the determination of the water content mortar for the compressive strength tests and for the determination of soundness and setting time, shall be obtained by the method described in IS 4031 (part 4) : 1988.

2.3 STEEL REINFORCEMENT: -

2.3.1 (a) The Contractor shall procure IS marked TMT bars of various grades from the steel manufacturers or their authorized dealers having valid BIS license for IS: 1786-2008 (Amendment-1 November 2012).

The procured steel should have following qualities:
Excellent ductility, bend ability and elongation of finished product due to possible refining technology.

Consumption of steel should be accurate as per design
Steel should have no brittleness problem in finished product.
Steel should carry the quality of corrosion and earthquake resistance.

Quality steel with achievement of proper level of sulphur and phosphorus as per IS: 1786-2008.

2.3.2 The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

2.3.3 Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time on written orders from the Engineer-in-charge to do so. Else the IISER PUNE shall remove it and recover double the cost of removal from the contractor.

2.3.4 The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.

2.3.5 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

2.3.6 For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of bar	For consignment below 100 tonnes	For consignment above 100 Tonnes
Under 10mm dia bars	One sample for each 25 tonnes or par thereof.	One sample for each 40 tonnes or part thereof.
10mm to 16mm dia bars	One sample for each 35 tonnes or part thereof.	One sample for each 45 tonnes or part thereof.
Over 16mm dia bars	One sample for each 45 tonnes or part thereof.	One sample for each 60 tonnes or part thereof.

2.3.7 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.

2.3.8 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.

2.3.9 The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

2.3.10 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The

original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.

2.3.11 Reinforcement including authorized spacer bars and laps shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.

2.3.12 The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, Steel Bars and T.M.T. bars into Standard Weight.

2.3.13 Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight. However for the stipulated issue of steel reinforcement up to and including 10mm diameter bars, the actual weight of steel issued shall be modified to take into account the variation between the actual and the standard coefficients and the contractors' accounts will be debited by the cost of modified quantity.

2.3.14 (a) If the Derived Weight as in sub-para (2.3.12) above is less than the Standard Weight as in Sub-para (2.3.11) above then the Derived Actual Weight shall be taken for payment provided, if it is within the following tolerances specified in IS1786-2008, otherwise whole lot will be rejected.

Tolerances on Nominal Mass

Nominal Size in mm	Tolerance on Nominal mass Percent		
	Batch	Individual Sample*	Individual sample for coil**
a) Upto and including 10	±7	-8	±8
b) Over 10 up to and Including 16	±5	-6	±6
c) Over 16	±3	-4	±4

For individual sample plus tolerance is not specified. **For coils batch tolerance is not specified.

If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para (2.3.11) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the Standard Weight.

2.4 SAFETY IN CONSTRUCTION

2.4.1 The contractor shall employ only such methods of construction, tools and plants as are appropriate.

2.4.2 The contractor shall take all precautions and measures to ensure safety of works and work man and shall be fully responsible for the same.

2.4.3 Safety pertaining to construction such as centering & shuttering, scaffolds, ladders, working platforms, gangway etc. shall be governed by CPWD safety code, relevant safety codes and the directions of Engineer in charge.

2.4.4 All the staging to be either of tubular steel structure with adequate bracings as approved or made of built up structural sections made from rolled structural steel sections.

2.4.5 Form work shall be properly designed for self weight, weight of reinforcement, weight of fresh concrete and in addition the various live loads likely to be imposed during construction process.

2.4.6 The form work shall be designed & constructed so as to remain sufficiently rigid during placing & compaction of concrete & shall be such as to prevent loss of slurry from the concrete.

2.4.7 The vertical supports shall be adequately braced or otherwise secured in position that these do not fall when the load gets released or the supports are accidentally hit.

2.4.8 A thorough inspection of tubular steel centring is necessary before its erection and members showing evidence of excessive rusting, kinks, dents or damaged welds shall be discarded. Buckled or broken members shall be replaced. Care shall also be taken that locking devices are in good working order and that coupling pins are effectively aligned to frames. Tubes should have end to end joints in adjacent tubes staggered. Sleeve couplers should be used in preference to joint pins for axial connections.

2.4.9 Inclined forms which give rise to very high horizontal forces should be taken care of by trussing and diagonal bracing

2.4.10 Vertical members should be placed centrally under the members to be supported and over the member supporting them with no eccentricity exceeding 25mm

2.4.11 The centering frames shall be tied together with sufficient braces to make a rigid and solid unit. It shall be ensured that struts and diagonal braces are in proper position and are secured so that frames develop full load carrying capacity. As erection progresses, all connecting devices shall be in place and shall be fastened for full stability of joints and units.

2.4.12 Wedges under the supports shall be set on firm soil / PCC which assures adequate stability for all props. Care shall be taken not to disturb the soil under the supports. Adequate drainage shall be provided to drain away the water coming due to rains, easing of forms or during the curing of the concrete to avoid softening of the supporting soil strata.

2.4.13 During pouring of the concrete the centering shall be constantly inspected and strengthened, if required wedges below the vertical supports tightened and adjustment screws properly adjusted as necessary.

2.4.14 Only workmen actually engaged in the form work shall be allowed in the area during operations. Those engaged in removing the form work shall wear helmets, gloves and heavy soled shoes and approved safety belts etc.

2.4.15 The safety code as lay down in respective clauses of Agreement shall be strictly followed.

SPECIAL CONDITIONS FOR GREEN BUILDING

The building is proposed to be designed for TERI (The Energy and Resources Institute) - GRIHA (Green Rating for Integrated Habitat Assessment) **Rating-4 green building rating system**. The contractor is required to execute the work in a befitting manner to obtain the targeted minimum GRIHA 4 rating.

Special conditions for GRIHA rating

The contractor shall prepare scheme for the approval of Engineer -in-charge for obtaining GRIHA 4 rating in the criteria relevant to the execution of work

The contractor shall plan and execute the work in a manner to preserve and protect the landscape during construction and shall arrange the materials/equipment and follow the procedure as per **GRIHA 4 rating as applicable.**

All the mandatory criteria of GRIHA and additional conditions for Green Building practices are to be necessarily followed.

The contractor shall comply with NBC norms on construction safety, health and sanitation as per GRIHA 4 rating system.

The construction activity shall be done in a befitting manner and the contractor shall adopt measures to prevent air pollution at site in compliance with criterion 9 of GRIHA rating as applicable.

The contractor shall comply with all the instructions and schemes for execution of Green building.

Nothing shall be paid extra for all these conditions except for the items existing in the schedule of quantities. For such items work done shall be paid on the basis of the agreement rates.
Pre-construction Stage

Construction Vehicles, Equipment and Machinery

All vehicles, equipment and machinery to be procured for construction shall conform to the relevant Bureau of India Standard (BIS) norms.

Emission from the vehicles must conform to environmental norms.

Dust produced from the vehicular movement and other site activities is to be mitigated by sprinkling of water.

Noise limits for construction equipment shall not exceed 75 dB(A), measured at one meter from the edge of the equipment in free area, as specified in the Environment Protection Act,1986, schedule VI
part E, as amended on 9th May,1993. The maximum noise levels near the construction site should be limited to 65 dB (A) Leq (5 min) in project area.

Construction Stage

Construction Wastes Disposal

The pre-identified dump locations will be a part of solid waste management plan to be prepared by the Contractor in consultation with Engineer -in-charge.

Contractor shall get approved the location of disposal site prior to commencement of the excavation on any section of the project location.

Contractor shall ensure that any spoils of material / construction waste will

not be disposed off in any municipality solid waste collection bins. Procurement of Construction Materials

All vehicles delivering construction materials to the site shall be covered to avoid spillage of materials and maintain cleanliness of the roads.

Wheel Tyres of all vehicles used by of the contractor, or any of his sub contractor or materials suppliers shall be cleaned and washed clear of all dust/mud before leaving the project premises. This shall be done by routing the vehicles through tyre washing tracks.

Contractor shall arrange for regular water sprinkling at least twice a day (i.e. morning and evening) for dust suppression of the construction sites and unpaved roads used by his construction vehicles.

Water Pollution

The Contractor shall take all precautionary measures to prevent the wastewater during construction to accumulate anywhere.

The wastewater arising from the project is to be disposed off in the manner that is acceptable to the CPCB.

Air and Noise Pollution
Contractor shall use dust screens and sprinkle water around the construction site to arrest spreading of dust in the air and surrounding areas.

Contractor shall ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.

For controlling the noise from Vehicles, Plants and Equipment, the Contractor shall confirm the following:

All vehicles and equipment used in construction will be fitted with exhaust silencers.

Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.

Noise emission from compactors(rollers) front loaders, concrete mixers, cranes(movable), vibrators and saws should be less than 75 dB(A).

As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Sets (2-1010 KVA) should be less than 94+10 log 10 (KVA). The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB (A) each as mandatory.

Personal Safety Measures for Labour

Contractor shall provide the following items for safety of workers employed by contractor and associate agencies:

Protective footwear/ helmet and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/sewer line.

Welder’s protective eye-shields to workers who are engaged in welding works.

Safety helmet and Safety harness/ belt Provide adequate sanitation/safety facilities for construction workers to ensure the health and safety of the workers during construction, with effective provisions for the basic facilities such as sanitation, drinking water and safety equipment or machinery.

All the workers should be wearing helmet and shoes all the time on site.

Masks and gloves should be worn whenever and wherever required.

Adequate drinking water facility should be provided at site, adequate number of decentralized latrines and urinals to be provided for construction workers.

Full time workers (if any with the approval of Engineer-in-Charge) residing on site should be provided with clean and adequate temporary hutment.

First aid facility should also be provided.

Overhead lifting of heavy materials should be avoided. Barrow wheel and hand-lift boxes should be used to transport materials onsite.

Tobacco and cigarette smoking should be prohibited onsite.

All dangerous parts of machinery are well guarded and all precautions for working on machinery are taken.

Maintain hoists and lifts, lifting machines, chains, ropes and other lifting tackles in good condition. Provide safety net of adequate strength to arrest falling material down below.

Use of durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.

Ensure that walking surfaces or boards at height are of sound construction and are provided with safety rails and belts. Provide protective equipment such as helmets.

Provide measure to prevent fire. Fire extinguisher and buckets of sand to be provided in fire-prone area and elsewhere.

Provide sufficient and suitable light for working during night.

Ensure that measures to protect workers from materials of construction, transportation, storage and other dangers and health hazards are taken.

Ensure that the construction firm/division/company have sound safety policies.

Comply with the safety procedure, norms and guidelines (as applicable) as outlined in NBC 2005 (BIS 2005).

Adopt additional best practices and prescribed norms as in NBC 2005 (BIS2005).

Identify roads on-site that would be used for vehicular traffic. Update vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral type that make up the surface base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10 -20%. Limit vehicular speed on site 10km/h. Nothing extra will be payable for this.

All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust/particulate emissions.

Spills of dirt or dusty materials shall be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean - up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

Ensure that water spraying is carried out by wetting the surface by spraying water on:

Any dusty material.

Areas where demolition work is carried out.

Any unpaved main-haul road and.

Areas where excavation or earth moving activities are to be carried out.

The contractor shall ensure the following:

Cover and enclose the site by providing dust screen, sheeting or netting to scaffold along the perimeter of a building.

Covering stockpiles of dusty material with impervious sheeting.

Covering dusty load on vehicles by impervious sheeting before they leave the site.

Transferring, handling/storing dry loose materials like bulk cement and dry pulverized fly ash inside a totally enclosed system.

Spills of dirt or dusty materials shall be cleaned up promptly so that the spilled material does not become a source of fugitive dust and also to prevent seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained / cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

Clear vegetation only from areas where work will start right away.

Adopt measures to prevent air pollution in the vicinity of the site due to construction activities. There is no standard reference for this. The best practices should be followed (as adopted from international best practice documents and codes).

Provide safety barricading of site by drawing ribbon band along the site boundary, next to a road or other public area.

The contractor shall provide experienced personnel with suitable training to ensure that these methods are implemented. Prior to the commencement of any work, the method of working, plant equipment and air pollution control system to be used on -site should be made available for the inspection and approval of the Engineer -in-Charge to ensure that these are suitable for the project.

Employ measures to segregate the waste on-site into inert, chemical or hazardous wastes. Recycle the unused chemical/hazardous wastes such as oil, paint, batteries and asbestos. As per GRIHA 4 rating (inert and Hazardous waste must be collected and storied separately from site. Proper training must be given to all construction workers in order to train them to be able to handle different kind of waste on site. In addition to segregating the inert and hazardous waste, it is also important to either reuse the construction waste on site or safety dispose it off to designated agencies for recycling.

To preserve the existing landscape and protect it from degradation during the process of construction. Select proper timing for construction activity to minimize the disturbance such as soil pollution due to spilling of the construction material and its mixing with rainwater. The construction management plan including soil erosion control management plan shall be prepared accordingly for each month. The application of erosion control measures includes construction of gravel pits and tyre washing bays of approved size and specification for all vehicular site entry/exits, protection of slopes greater than 10%. Sedimentation Collection System and run-off diversion systems shall be in place before the commencement of construction activity. Preserve and protect the existing vegetation by not-disturbing or damaging to specified site areas during construction.

The Contractor should follow the construction plan as proposed by the Engineer-in-charge

landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site.

Spill prevention and control plans should clearly state measures to stop the source of the spill. Measures to contain the spill and measures to dispose the contaminated material and hazardous wastes. It should also state the designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners and petroleum products.

A Soil Erosion and Sedimentation Control Plan (ESCP) should be prepared prior to construction and should be applied effectively.

The contractor shall prepare and submit 'Spill prevention and control plans' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.

The contractor shall ensure that no construction leaches (Ex: cement slurry) is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant -laden water directly to the treatment device or facility (municipal sewer line).

All lighting installed by the contractor around the site and at the labour quarters during construction shall be energy efficient fixtures of the appropriate illumination levels.

All paints, adhesives and sealants should comply with the VOC limits prescribed as a

Green initiatives as follows:

The VOC (volatile organic compound) content of adhesives and sealants used on the interior of the building must be less than VOC content limits mentioned below. A list of all the adhesives and sealants used for the project is to be submitted along with the manufacturer's certificate supporting the VOC content.

Architectural Applications	VOC Limit(g/l minus water)
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Wood Flooring Adhesives	100
Rubber Floor Adhesives	60

Sub floor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove base adhesives	50
Structural Glazing Adhesives	100
Multipurpose Construction Adhesives	70

Substrate Specific Application	VOC Limit(g/l minus water)
Metal to Metal	30
Porous Material(except wood)	50
Plastic Foams	50
Wood	30
Fibreglass	80

Specialty Application	VOC Limit(g/l minus water)
PVC Welding	510
CPVC Welding	490
ABS Welding	325
Plastic cement welding	250

Adhesive primer for plastic	550
Top and Trim Adhesive	250
Contact Adhesive	80
Special purpose Contact Adhesive	250
Structural wood member adhesive	140
Sheet applied rubber lining operations	850
Sealants	VOC Limit(g/l minus water)
Architectural	250
Non Membrane Roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
Sealant Primers	
Architectural, nonporous	250
Architectural, porous	775
Other	750
Aerosol Adhesives	
General purpose mist spray	65% VOC's by weight
General purpose web spray	55% VOC's by weight
Special purpose aerosol adhesives (all types)	70% VOC's by weight

All the building materials and systems used on site must be as per the specifications and approved makes by the Engineer-In-Charge.

All required certificates explaining the properties of the building material/system needs to be obtained from the manufacturer/vendor as required by the green building rating authority. The final certificates would be produced after the approval of green building consultant with necessary due diligence. The purchase orders of all the materials made with the manufacturers / authorized vendors should be maintained and shall be provided for the process with due diligence upon request.

Water saving measures as suggested by the consultants need to be followed on site.

The contractor / subcontractor shall prepare and submit a Site Management Plan (SMP) within 10 days of start, for approval by the Engineer -in-charge. This SMP shall indicate the locations of godown, stockpiles, barricading, waste storage, offices, vehicular movement routes etc. In short this SMP would comprehensively represent how the site activities shall be managed conforming to GRIHA 4 Star guidelines. Contractor will be penalized @ Rs. 1000/- per day of delay on non-submission of SMP beyond due date to be recovered from next RA bill.

Any other site management measures suggested by the Engineer-in-charge / green building consultant shall be followed on site.

The contractor shall submit to the Engineer -in-Charge after construction of the buildings, a detailed as built quantification of the following within 10 days of recording of completion. Contractor will be penalized @ Rs. 500/- per day of delay in submission of “detailed as built quantification”.

Total materials used

Total waste generated,

Total waste reused,

Total water used,

Total electricity consumed, and

Total diesel consumed.
Evidence for the implementation of the all the above required measures shall be provided to the Engineer-in-Charge in the form of photographs and templates as required which is required for the submission to the green building rating authority.

Nothing extra shall be payable for above provisions unless otherwise specified in Schedule of Quantity.

PARTICULAR SPECIFICATIONS

(Civil Component)

GENERAL

1.1 The work shall be carried out as per CPWD Specifications 2009 Vol. I & II with up to date correction slips.

1.2 The work shall be executed and measured as per metric dimensions given in the Schedule of quantities, drawings etc. (F.P.S. units wherever indicated are for guidance only).

1.3 Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any.

1.4 Unless otherwise specified in the schedule of quantities the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source, such as rains, floods, and sub-soil water table being high due to any other cause whatsoever.

1.5 Unless otherwise specified in the schedule of quantities, particular specifications or CPWD specifications (subject to the order or preference) the rates tendered by the tenderer shall be all inclusive and shall apply to all lifts, all heights and all floor including terrace, leads and depths and nothing extra over and above the schedule of quantity shall be payable on this account.

1.6 The work shall be carried out in accordance with the Architectural drawings, structural drawings and approved shop drawings. The structural shop and architectural drawings shall have to be properly correlated before executing the work. In case of any difference noticed between architectural and structural drawings, the contractor shall obtain final decision of the Engineer-in-charge. In case of any discrepancy in the item given in the schedule of quantities appended with the tender and architectural drawings related to the relevant items, the former shall prevail unless and otherwise given in writing by the Engineer in charge. Nothing extra shall be payable on this account.

1.7 Wherever any reference to any Indian Standards occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of receipt of tenders.

1.8 The following additional specifications shall apply:

1.8.1- All stone aggregate and stone ballast shall be of hard stone variety and to be obtained from quarries near & around to site of work, approved by the IISER PUNE of Mines, Govt. of A.P. and as per direction of the Engineer in charge

1.8.2 Coarse sand should be obtained from sand quarries of nearby rivers, approved by the IISER PUNE of Mines, Govt. of A.P. and as per direction of the Engineer in charge. Sand to be used for cement concrete work i/c RCC, mortar for masonry and plaster work shall be of standard quality and screened as required. It shall be clean sand.

In case of non availability of sand, the agency may be permitted at the discretion of Engineer-in Charge to use crushed stone sand on their request on production of adequate proof of non availability of the same, provided it confirms to grading and other requirements given in CPWD specifications. The change in sand type or source would require revision of Mix Design of Concrete from the approved laboratories. for which nothing extra shall be paid. In case of use of crushed stone sand, all necessary precautions for work, RCC work, masonry work, plaster work and all other related works shall be taken by the agency as per relevant CPWD specifications and BIS codes without any extra cost.

1.9 The rates for all items of work shall unless clearly specified otherwise include for all floor levels of building and cost of all operations and all inputs of labour, material, T&P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all taxes, GST, duties, levies etc. required for execution of the work.

1.10 All crossings, embedment etc. in walls and floors for water supply, drainage and sanitary pipes, fittings etc. shall be provided for individual walls and floors so as to avoid cuttings of masonry work and floors. All such areas shall be made good during finishing and nothing extra shall be payable on these accounts.

1.11 Product delivery, storage and handling of chemicals.

1.11.1 The contractor shall construct storage space for Chemicals to ensure that the storage conditions are as recommended by the manufactures.

1.11.2 All the materials shall be procured and delivered in sealed containers with labels legible and intact.

1.11.3 All the chemicals (polymers, epoxy, water proofing compound, plasticizer, Polysulphide, all exterior and interior paints, polish etc.) shall be procured in convenient packs say 20 litres/Kgs.} capacity packing only or as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200 litre (Kgs.) drums unless otherwise specifically permitted by the Engineer-in-Charge. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the Director, IISER PUNE.

1.11.4 All material required for the execution of the work shall be got approved, procured and deposited with the IISER PUNE supervisory staff. The materials shall be kept in joint custody of the contractor and the IISER PUNE. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained. Different containers of each chemical shall be serially numbered on packing and also consumed in that order. Day-to-Day account of receipt, issue and balance shall be regulated by the IISER PUNE and proper account shall be maintained at site of work in the prescribed form as per the standard practice.

1.11.5 All the chemicals shall be procured by the contractor directly from the manufacturer. In exceptional circumstances, the contractor may be allowed to procure the materials from the authorized dealers of the manufacturers, if specifically permitted by the Engineer-in-Charge.

1.11.6 The original copies of challan / cash memos towards the quantity of various chemicals procured shall be made available by the contractor at the request from the Engineer-in-Charge and a copy of the same shall be kept in record.

1.11.7 The Name of manufacturers, manufacturer's product identification, manufacturer's mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of the each container.

1.11.8 The contractor shall submit for the chemicals procured, manufacturer's and / or authorized dealer's certificate regarding supplying and verifying conformance to the material specifications, as specified.

1.11.9 All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.

1.11.10 Empty containers of the chemicals should not be removed from site till the

completion of work and shall be removed only with the written approval of the Engineer-in-Charge.

1.11.11 All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.

1.11.12 Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipment in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.

1.11.13 All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.

1.11.14 The chemicals shall be tested in an independent laboratory as approved by the Director, IISER PUNE at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in-Charge. Nothing extra shall be payable on this account. However, testing charges shall be borne by the IISER PUNE for the samples satisfying the requirements specified in the tender.

EARTH WORK:-

2.1 Earth work shall be executed as per CPWD specifications.

2.2 Excavation shall be undertaken to the width of footing including necessary margins for construction operation as per drawing or directed otherwise. Where the nature of soil or the depth of the trench and season of the year, do not permit vertical sides, the contractor at his own expense shall put up the necessary shoring, strutting and planking or cut slopes with or without steps, to a safer angle or both with due regard to the safety of personnel and works and to the satisfaction of the Engineer. Measurement of plan area of excavation for payment shall only be permitted.

2.3 All the major excavation shall be carried out by mechanical excavator. No extra payment shall be made for that.

2.4 The contractor shall make at his own cost all necessary arrangements for maintaining water level, in the area where works are under execution low enough so as not to cause any harm to the works or problems in carrying out with the execution and the rates for all items of work shall be considered as inclusive of pumping out or bailing out water, if required and for which no extra payment shall be made. This will include water coming from any source, such as rains,

accumulated rain water, floods, leakages from sewer and water mains subsoil water table being high or due to any other cause whatsoever. The contractor shall make necessary provision of pumping, dredging, bailing out water coming from all above sources and excavation and other works shall be kept free of water by providing suitable system approved by the Engineer-in-Charge.

2.5 De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor's responsibility. Such

scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient
drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels, etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.

2.6 In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

3.0 C C &R.C.C. WORK:-

CONCRETE MIX DESIGN AND TESTING - Conditions for Ready Mix Concrete brought from outside or through at Site fully automatic ready mix plant of minimum capacity 60 cum/hr.

23.1 For cement concrete/Reinforced Cement Concrete (RCC) Works –

The following parameters shall be adopted for mix design in severe exposure.

a) For M 10 grade ready mix concrete:-

1.	Grade of concrete	M 10
2	Nominal maximum size of aggregate	20mm angular as per specifications.
3	Degree of quality control	Good
4	Maximum water cement ratio	0.50
5	Minimum Cement Concrete	180 kg/cum of concrete
6	Type of Cement used	OPC 53 grade or higher grade conforming to IS : 8112
7	Sand	Natural /crushed Coarse sand as per Specifications.
8	Fly ash	fly ash 20% or more confirming to Grade I of IS 3812 (Part-I) with uniform blending with cement in accordance with clauses 5.2 and 5.2.1 of IS 456:2000 .

b) For M 30 grade Ready Mix Concrete

1.	Grade of concrete	M 30
2	Nominal maximum size of aggregate	20mm angular as per specifications.
3	Degree of quality control	Good
4	Type of exposure	Severe
5	Maximum water cement ratio	0.50
6	Minimum Cement Concrete	345 kg/cum of concrete
7	Type of Cement used	OPC 53 grade or higher grade conforming to IS : 8112
8	Sand	Natural /crushed Coarse sand as per Specifications.
9	Fly ash	fly ash 20 % or more confirming to Grade I of IS 3812 (Part-I) with uniform blending with cement in accordance with clauses 5.2 and 5.2.1 of IS 456:2000 .

3.2 Approved admixtures confirming to IS:9103 shall be permitted to be used. The chloride content in the admixture shall satisfy the requirements of BIS:5075. The total amount of chloride content in the admixtures mixed concrete shall satisfy the requirements of IS:456-2000.

3.3. The concrete mix design with and without admixture will be got carried out by the contractor through laboratories/Test Houses, approved by the Engineer-in-charge.

3.4 The various ingredients for mix design / laboratory test shall be sent to the Lab/test houses through the Engineer-in-charge and the samples of such ingredient sent shall be preserved at site by the department till completion of work. The samples shall be taken from the approved materials which are proposed to be used in the work.

3.5 The contractor shall submit the mix design report from the approved laboratory and get approval of Engineer-in-charge. No concreting shall be done without prior approval of the mix design by the consultant & Engineer-in-charge.

3.6. The contractor shall make cubes of trials mixes as per approved mix design at site laboratory for all grades of concrete in presence of Engineer-in-charge using same ingredient as adopted for design mix prior to commencement of concreting and get them tested in presence of Engineer-in-charge for 7 days and 28 days.

3.7 The contractor shall submit the mix design report from the approved laboratory and get approval of Engineer-in-charge. No concreting shall be done without prior approval of the mix design by the Engineer-in-charge.

3.8 The contractor shall make cubes of trials mixes as per approved mix design at site laboratory for all grades of concrete in presence of Engineer-in-charge using same ingredient as adopted for design mix prior to commencement of concreting and get them tested in presence of Engineer-in-charge for 7 days and 28 days.

3.9 For each change of source/quality/characteristic properties of the ingredients from that approved & used in the concrete mix during the work, a fresh mix design shall be got done by the contractor from the approved laboratory. Revised trial mix test shall be conducted at laboratory established at site and shall be submitted by the contractor as per the direction of Engineer-in-charge.

3.10 The cost of packaging, sealing, transportation, loading, unloading, cost of samples and the testing charges for mix design in all cases shall be borne by the contractor.

3.11 The rate for the item of Ready mix concrete shall be inclusive of all the ingredients including admixtures if required, labour, placing, curing, compacting, pumping, machinery, T & P etc. (except shuttering which shall be measured and paid for separately) required for design mix

concrete of required strength and workability. The rate quoted by the agency shall be net and nothing extra shall be payable on account of change of quantities of concrete ingredients like cement and aggregates and admixtures etc. as per the approved mix design.

3.12 The contractor shall engage Ready Mix Concrete (RMC) producing plant to supply RMC for the work. The RMC plant proposed to be engaged by the contractor shall fulfill the following requirements.

It shall be fully computerized.

It should have supplied RMC for Govt./Public undertakings/Local bodies project of similar magnitude.

It should have facility for providing printed dispatch slips showing ingredients of concrete carried by each mixer.

It shall have a lab with all kind of testing equipment for the checking of concrete and related materials.

3.13 The contractor shall within 15 days of award of the work, submit list of at least two RMC plant companies of repute along with details of such plants including details of transit mixer, pumps etc. to be deployed indicating name of owner company, its location, capacity, technical establishment, past experience and text of M.O.U. proposed to be entered between purchaser (the contractor) and supplier (R.M.C. plant) to the Engineer-in-charge who shall give approval in writing (subject to drawl of M.O.U.). The contractor shall draw the M.O.U. with approved R.M.C. plant owner and submit to Engineer-in-charge within a week of such approval. The contractor will not be allowed to purchase ready mixed-concrete without completion of above stated formalities for use in this project.

3.14 Engineer-in-Charge reserves the right to cancel the approval of plant with or without assigning any reason.

The Engineer-in-Charge reserves the right to exercise control over the :-

Ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recordings of test results and declaring the materials fit or unfit for use in production of mix.

Calibration check of the R.M.C.

Weight and quantity check on the ingredients, water and admixtures added in batch mixing.

Time of mixing of concrete.

Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability, during production and taking corrective action.

3.15 For exercising such control, the Engineer-in-charge shall periodically depute his authorized representative at the RMC plant. It shall be responsibility of the contractor to ensure that all necessary equipment, manpower and facilities are made available to Engineer-in-Charge / his representative at R.M.C. plant.

3.16 Ingredients, admixtures and water declared unfit for use in production of mix shall not be used. A batch mix found unfit for use shall not be loaded into the truck for transportation.

3.17 All required relevant records of R.M.C. shall be made available to the Engineer-in-Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials and production and transportation of concrete mix which shall be binding on the contractor & the R.M.C. plant.

3.18 43 grade OPC (Conforming to IS : 8112) of brand / make / source as approved by Engineer-in-charge shall only be use for production of concrete.

3.19 QUALITY CONTROL OF READY-MIXED CONCRETRE

It shall be the responsibility of the contractor to ensure that the RMC producer provides all necessary testing equipment and takes all necessary measures to ensure quality control of ready-mixed concrete.

In general the required measures shall be:-

(I) CONTROL OF PURCHASED MATERIAL QUALITY

R.M.C. producer shall ensure that all the materials purchased and used in the production of concrete conform to the stipulation of the relevant agreed standards with the materials suppliers and the requirements of the products mix design and quality control procedures. This shall be accomplished by visual checks, sampling and resting, certification from material supplier and information data for material supplier. Necessary equipment for the testing all material shall be provided and maintained in calibrated condition at the plant by the R.M.C. producer.

(II) CONTROL OF MATERIAL STORAGE

Adequate and effective storage arrangement shall be provided by, RMC producer at RMC plant for prevention of contamination, reliable transfer and feed systems, drainage of aggregates, prevention of freezing or excessive solar heating of aggregate etc.

(III) COMPUTER PRINT OUTS OF EACH TRUCK LOAD

Each truckload transit mixer dispatched to site shall carry computer printout of the ingredients of the concrete it is carrying. The printout shall be produced to Engineer-in-Charge or his representative at site before R.M.C. is used in work.

(IV) TRANSFER AND WEIGHING EQUIPMENT

R.M.C. producer shall ensure that a documented calibration is in place. Proper calibration records shall be made available indicating date of next calibration due, corrective action taken etc. R.M.C. producer shall ensure additional calibration cheeks whenever required by Engineer-in-Charge in writing to contractor. R.M.C. producer shall also maintain a daily production record including details of customers to whom R.M.C. was supplied including that day's production including water and admixtures.

The accuracy of measuring equipment shall be within +2% quantity of cement, -3% of quantity of aggregate, admixture and water being measured.

(V) MAINTENANCE OF PLANT, TRUCK MIXERS AND PUMPS

Plant, Truck, Mixers and pumps should be well maintained so that it does not hamper any operation of production, transportation and placement.

(VI) PRODUCTION OF CONCRETE:-

3.20 The following precautions shall be taken during the production of R.M.C. at the plant.

Weighing (correct reading of batch data and accurate weighing)-: For each load, written, printed or graphical records shall be made of the weights of the materials batched, the estimated slump, the total amount of water added to the load, the delivery tickets number for that load and the time of loading the concrete into the truck.

Visual observation of concrete during production and delivery or during sampling and testing of fresh concrete, assessment of uniformity, cohesion, workability, adjustment to water content :- The workability of the concrete shall be controlled on a continuous basis during production. The batch mix found unfit shall not be loaded into the truck for transportation. Necessary corrective action shall be taken in the production of mix as required for further batches.

Use of adequate equipment at the plant to measure surface moisture content of aggregates, particularly fine aggregate and the workability of the concrete, cube test etc. shall also be ensured.

Making corresponding adjustment at the plant automatically or manually to batched quantities to allow for observed, measured or reported changes in materials or concrete quantities.

Sampling of concrete, testing, monitoring of results.

Diagnosis and correction of faults identified from observations / complaints

The RMC plant produced concrete shall be accepted by Engineer-in-Charge at site after receipt of the same after fulfilling all the requirements of mix mentioned in the tender documents.

Ready mix concrete shall be arranged in quantity as required at site of work. The ready mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-Charge.

3.21 If so required by the Engineer-in-Charge, the RMC producer shall provide separate storage space / godowns for storage of materials approved by Engineer-in-Charge for the design mix concrete.

3.22 The use of PPC RMC shall not be permitted.

3.23 Frequency of sampling and standard of acceptance shall be as per specifications for design mix concrete.

3.24 The RMC shall be placed by pump of suitable capacity and the contractor shall arrange sufficient length of pipe at site to place the RMC in the minimum required time. The contractors shall co-ordinate with R.M.C. supplier and pump hirer to have effective concrete placement. Nothing extra shall be paid for placing of concrete through concrete pump.

The representative of R.M.C. supplier shall attend the site meeting as and when decided by the Engineer-in-Charge.

3.26 i) The contractor shall access the quantity of R.MC. requirement at site well in advance and order accordingly to the R.M.C. supplier. In case excess R.M.C. is received at site, the Department shall not be under any obligation to get the extra quantity utilized and no payment for such R.M.C. shall be made.

ii) The contractor shall have to employ labour in shifts to ensure continuous casting of slabs and other RCC members. No extra payment on this account shall be made.

The department will recommend to the Traffic Police to issue permits for the entry of the vehicles through the area of no entry zone to the working area. However, absence of such permits will not be cause for delay in completion of the work.

The RMC concrete is required to be placed at site within the initial setting period of concrete. In case there is delay in placement of concrete the same shall be rejected and shall not be allowed to be used at site.

In order to monitor the placement of RMC within initial setting time necessary record needs to be maintained at site.

3.30 All materials to be used on the work shall conform to relevant specifications. The Engineer in charge reserves the right to reject any material not up to specification and the contractor will have no claim for any damage, loss or compensation on his account

3.31 The natural sand if required shall be washed and rewashed as directed by Engineer in charge-In-Charge. The washed water of the natural sand shall be free from chlorides and sulphates, whose presence, if any, shall be checked with silver nitrate and barium chloride respectively. Manufactured sand shall be permitted for usage only on the specific approval from the Engineer in charge

3.32 The contractor shall note that use of self compacting concrete (SCC) using fly ash is envisaged for the work. Therefore, the contractor shall be well equipped to produce, transport, place and finish SCC.

3.33 Measurement:

Dimensions shall be measured nearest to a cm except for the thickness of slab which shall be measured correct to 0.5 cm. The areas shall be worked out nearest to 0.01 sqm. The cubical contents shall be worked out to nearest 0.01 cum.

No deduction shall be made for the following :

Ends of dissimilar materials (e.g. joists, beams, post girders, rafters, purlins, trusses, corbels, steps etc.) up to 500 sqcm. in cross section.

Opening up to 0.1 sqm.
(Note : In calculating area of openings up to 0.1 sqm the size of opening shall include the thickness of any separate lintels or sills. No extra labour for forming such openings or voids shall be paid for.

The volume occupied by reinforcement

The volume occupied by water pipes, conduits etc. not exceeding 25 sq. cm each in cross sectional area. Nothing extra shall be paid for leaving and finishing such cavities and holes.

Measurement shall be taken before any rendering is done in concrete members. Measurement will not include rendering. The measurement of RCC work between various units shall be regulated as below :

Slabs shall be taken as running continuously through except when slab is monolithic with the beam. In that case it will be from the face to face of the beam.

Beams shall be measured from face to face of columns and shall include haunches, if any, between columns and beam. The depth of the beam shall be from the bottom of slab to the bottom of beam if beam and slab are not monolithic. In case of monolithic construction where slabs are integrally connected with beam, the depth of the beam shall be from the top of the slab to the bottom of beam.

The columns measurement shall be taken through

Chajjas along with its bearing on wall shall be measured in cum nearest to two places of decimal. When Chajjas is combined with lintel. Slab or beam, the projecting portion shall be measured as chajjas, built in bearing shall be measured as per item of lintel, slab or beam in which chajjas bears.

Where the band and lintel are of the same height and the band serves as lintel, the portion of the band to be measured as lintel shall be for clear length of opening plus twice the over all depth of band.

3.34 Tolerances

Subject to the condition that structural safety is not impaired and architectural concept does not hamper, the tolerances in dimensions of RCC members shall be as specified in the drawings by the designer. Whenever these are not specified, the permissible tolerance shall be decided by the Engineer-in-Charge after consultation with the designer, if necessary.

When tolerances in dimensions are permitted, following procedure for measurements shall apply :

If the actual dimensions of RCC members do not exceed or decrease the design dimensions of the members plus or minus tolerance limit specified above, the design dimensions shall be taken for the purpose of measurements.

If the actual dimensions exceed the design dimensions by more than the tolerance limit, the design dimensions only shall be measured for the purpose of payment.

If the actual dimensions decrease more than the tolerance limit specified, the actual dimensions of the RCC members shall be taken for the purpose of measurement and payment.

For acceptance of RCC members whose dimensions are not exactly as per design dimensions, the decision of Engineer-in-Charge shall be final. For the purpose of payment, however, the clarification as given in para a, b and c above shall apply.

3.35 Payment

3.35.1 Where the concrete fulfills the criteria as specified in AS SPECIFIED CPWD SPECIFICATIONS 2009 VOL-I. Acceptance Criteria, full payment shall be payable subject to the conforming to prescribed specifications.

3.35.2 Where the concrete does not satisfy the Acceptance Criteria and nondestructive test has been ordered or where the nondestructive test has been otherwise ordered, the result of nondestructive test shall prevail over the Acceptance Criteria as specified in CPWD specifications 209 VOL-1. Where concrete does not satisfy the strength requirements in Nondestructive test, the Engineer-in-Charge may reject the concrete represented by the test. However, the Engineer-in-Charge may accept the said concrete after remedial measures / retrofitting / rehabilitations, as shall be suggested by approved institutes (IIT Madras/ SERC Chennai), are carried out by the contractor at his risk and cost. The cost of consultancy to such institutes shall also be borne by the contractor. The decision of Engineer-in-Charge shall be final and binding.

3.36 Rate:

3.36.1 The rate includes the cost of materials, labours and other inputs involved in all the operations described above, finishing top of concrete in line and level, curing, protection from rains etc. except for the cost of reinforcement , centering and shuttering and applicable GST.

3.36.2 No extra payment for richer mix which projects into any member from another member during concreting of junctions of beams, slabs and columns etc. will be made except where so indicated in the structural drawings.

3.37 FORM WORK

3.37.1 The work shall be done in general as per CPWD Specifications.

3.37.2 Only M.S. centring / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the Engineer-in-Charge.

3.37.3 Nothing extra shall be paid for the centring and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.

3.37.4 Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 metres.

3.37.5 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centring, shuttering and casting for which nothing extra shall be paid to the Contractor except the places where different type of flooring is provided in the same room.

As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm or as required, lower than general floors shuttering should be adjusted accordingly. Nothing extra is payable on this account.

3.37.6 Steel shuttering as approved by the Engineer-in-Charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces are required to complete the shuttering panels.

Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work.

The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de- bonding compound such as “Reebole” of FOSROC or equivalent shall be applied on the surface of the shuttering plates in the requisite quantity before assembly of steel reinforcement. Nothing extra shall be paid on this account.

3.37.7 Concreting of upper floor shall not be done until concrete of lower floor has set at least for 14 days but form work and reinforcement can be taken up after the concrete has set at least for three days.

3.37.8 Double steel scaffolding having two sets of vertical supports shall be provided for external wall finish, cladding etc. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding platform shall be fixed. Scaffolding shall have steel staircase for inspection of works at upper levels. Nothing extra shall be paid on this account.

3.38 REINFORCEMENT:-

3.38.1 The reinforcement shall be done as per CPWD Specifications.

3.38.2 The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.

3.38.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or approved equivalent) of high early strength and same colour as surrounding concrete. However,

Cover Guard Bars shall also be used to maintain proper cover of RCC Columns in addition to spacer blocks as mentioned above. Pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge. The rate of RCC items is inclusive of cost of such cover blocks & Cover Guard Bars. Nothing extra shall be paid on this account.

3.39 PRE-CAST RCC WORK

3.39.1 The work shall be done in accordance with CPWD Specifications.

3.39.2 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks etc. and forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer-in-charge before taking up the work.

3.39.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.

3.39.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.

3.39.5 The compaction of the concrete shall be done by vibrating, table or external vibrator, as approved by Engineer-in-charge. The rate quoted for the item shall include the element for framework and mechanical vibration.

3.39.6 Rate for item includes cost of all materials. labour, and all operations involved.
Cost of M.S. frames, lugs including their welding, lifting hooks is also included.

3.39.7 In the item of providing and fixing precast reinforced cement concrete in shelves the cost of cutting chases and making good the same shall be inclusive in the item and nothing extra shall be paid on this account.

4.0 BRICK WORK:-

4.1.1 The brickwork shall be carried out with good quality Fly ash cement bricks of class designation as per BOQ item.

4.1.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.

4.1.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.

4.1.4 M.S. Strip/ Bar provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

5.0 EXPANSION JOINT

5.1 General- As per BOQ item

5.1.1 Seismic / separation/ expansion joints shall be provided where shown in the drawings and as per CPWD specifications and as directed by Engineer-in-Charge. They shall be constructed with in gap between the adjoining parts of the works of the width specified.

5.1.2 The contractor shall ensure that no debris is allowed to enter and be lodged in seismic/ separation/ expansion joints.

5.1.3 The expansion joint shall be cleaned and made dry completely. All loose materials shall also be removed. The joints gap shall be made uniform in width and depth after cleaning the joints. The backup materials of best quality shall be provided in position in order to produce thoroughly together in required proportion as prescribed by manufacture specification, so that a uniform mixture obtained. The mixed solution shall be applied to two sides of the joint that it covers the sides complete. Disturbed edges of RCC members near expansion joints shall be finished with rich mortar without any extra work includes providing required width of expansion board in the joints and measurement of expansion board only shall be taken.

6.0 GRANITE/ MARBLE OR LIKE WORKS

6.1 The granite/ marble or like stonework shall, in general, be carried out as per the CPWD Specifications. The specifications for dressing, laying, curing, finishing, measurements, rate etc. for the granite/ marble or like stone flooring shall be same as that of works for the Marble flooring, skirting and risers of steps under Flooring Sub Head of the CPWD Specifications. The wall lining / veneer work with granite/ marble or like stone shall be as per the CPWD Specifications for Marble work Sub Head.

6.2 The decision of the Engineer-in-Charge as regards the approval of the samples for the various types of the granite/ marble or like stones shall be final and binding on the Contractor. No claim of any kind whatsoever shall be entertained from the Contractor on this account. The Contractor shall then procure and get the mock up prepared at site of work for approval of quality of workmanship and the granite/ marble or like stone as specified. The mock up shall be prepared in lift lobby, toilet etc. on one of the floors. The size of the stones shall be as per the architectural drawings. If the quality of the workmanship and the material is as per the required standards, the mock up shall be allowed as part of the work and measured for payment and shall not be dismantled. Otherwise, it shall be dismantled by the contractor as directed by the Engineer-in-Charge and taken away from the site of the work at his own cost. Nothing extra shall be payable on this account.

6.3 The granite/ marble or like stone slabs shall be cut to required sizes and shapes, as per the architectural drawings, to negotiate the curved steps in segmented manner. The risers shall also be cut to required sizes and shapes and the edges chamfered at the joints, all as per the architectural drawings. However, the Contractor shall prepare the detailed shop drawings for the same and commence work

only after the approval by the Engineer-in-Charge. The rate shall also include any consequent wastage, incidental charges involved in this work. Nothing extra shall be payable on this account. For the purpose of payment, the actual area of each type of granite/ marble or like stone as laid shall be measured.

6.4 For the steps (risers and treads) in the linear profile, the granite/ marble or like stone shall be provided in single pieces as per the architectural drawings, unless otherwise specifically permitted by the Engineer-in-Charge. Wherever grooves are required to be provided the same is to be done as per architectural drawings and as directed by the Engineer-in-charge. Wherever required, the joints shall be provided as per the architectural drawings. Nothing extra shall be payable on these accounts.

6.5 The granite/ marble or like stone slabs used for providing and fixing in the sills, soffits and jambs of doors, windows, ventilators and similar locations shall be in single piece unless otherwise directed by the Engineer-in-Charge. Wherever stone slab other than in single piece is allowed to

be fixed, the joints shall be provided as per the architectural drawings and as per the directions of the Engineer-in-Charge. Depending on the number of joints, as far as possible, the stone slabs shall be procured and fixed in slabs of equal lengths as per the architectural drawings and as directed by Engineer-in-Charge.

6.6 While fixing the granite/ marble or like stone slabs in sills, soffits and jambs of doors, windows, ventilators etc., rebates shall be made by overlapping the stones at the required places for fixing shutters for doors, windows and ventilators etc. as shown in the architectural drawings and as per the directions of the Engineer-in-Charge. Epoxy based adhesives shall be used for fixing the granite/ marble or like stones to each other, or wherever required. The authorized overlap as per the architectural drawings or as directed by the Engineer-in-Charge shall be measured for payment under the same item. However, any extra mortar thickness required due to the overlap arrangement shall be deemed to have been included in the rate of this item. Nothing extra shall be payable on this account. The stone shall have uniform thickness and shall be provided in sizes as per the architectural drawings. The stone slab shall have uniformly leveled surface after fixing. All the joints shall be finished smoothly in a workmanlike manner.

6.7 The granite/ marble or like stone work shall be adequately protected by a layer of Plaster of Paris, which shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.

7.0 WOOD WORK

7.1 The wood work in general shall be carried out as per CPWD Specifications (Volume-I) 2009, with up-to-date correction slips

7.2 The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.

7.3 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.

7.4 Timber shall be of specified species, good quality and well seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.

7.5 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coal tar.

7.6 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be accepted as kiln seasoned and/or chemically treated.

7.7 Transparent sheet glass conforming to IS: 2835 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 sqm	4.0 mm
(b) For glazing area more than 0.50 sqm to 0.90 sqm	6.0 mm

7.8 Factory made wooden flush door and panelled and wire gauge shutters shall be manufactured and carried out as per CPWD specifications (Volume-I, 2009 with up to date correction slips).

7.9 The work shall be executed through specialized agencies to be approved by the Engineer –in- Charge.

7.10 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however he accepted only if these meet the specified test.

7.11 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.

7.12 The shutters should be brought at site without primer / painting.

7.13 (a) Inspection of shutters shall be carried out for dimensions & tolerances, size & type general construction & workmanship, finish & glazing at the following frequency: -

Lot Size	Sample Size	Permissible number of defectiveness
Upto 25	2	0
26 to 50	5	0
51 to 100	8	0
101 to 150	13	1
151 to 300	20	2
301 to 500	32	3
501 to 1000	50	5
1001 & above	80	7

(b)Criteria for conformity

Any sample shutter failing in any one or more of the requirements inspected for as above shall be considered as defective. A lot shall be considered as having satisfied the requirements of the standard if the number of defective shutters in the sample does not exceed the corresponding permissible number of defectiveness given above.

Testing – The shutters shall be tested for species seasoning & treatment, defects in the timber, panel material, construction & workmanship in the approved Laboratory at the frequency mentioned in CPWD specification.

If shutters are found defective in any one of the criterion double the shutter shall be tested & if found permissible can be accepted. If shutter is found defective in more than one criterion, the whole lot shall be rejected.

Finish

All components of door shutter shall have smooth finish.

Panels of the door shutters shall be flat and well sanded to a smooth and level Surface.

All the surfaces of door shutters which are required to be painted or polished or varnished shall be got approved from the Engineer In Charge before applying protective coat of primer, polish or varnish.

8.0 Flush Doors

8.1 General

The door shall be of flush type solid core marine grade with single or double shutter as the case may be.

8.2 Shutters

Flush door shutters shall have a solid core and may be of the decorative or non-decorative (Paintable type as per IS 2202 (Part I). Nominal thickness of shutters may be 30mm as mentioned in the BOQ. Thickness and type of shutters shall be as specified.

Width and height of the shutters shall be as shown in the drawings or as indicated by the Engineer-in-Charge. All four edges of the shutters shall be square. The shutter shall be free from twist or warp in its plane. The moisture content in timbers used in the manufacture of flush door shutters shall be not more than 12 per cent when tested according to IS 1708.

8.3 Core

The core of the flush door shutters shall be a marine grade block board having wooden strips held in a frame constructed of stiles and rails. Each stile and rail shall be a single piece without any joint. The width of the stiles and rails including lipping, where provided shall not be less than 45mm and not more than 75mm. The width of each wooden strip shall not exceed 30mm. Stiles, rails and wooden strips forming the core of a shutter shall be of equal and uniform thickness. Wooden strips shall be parallel to the stiles.

8.4 End joints of the pieces of wooden strips of small lengths shall be staggered. In a shutter, stiles and rails shall be of one species of timber. Wooden strips shall also be of one species only but it may or may not be of the same species as that of the stiles and rails. Any species of timber may be used for core of flush door. However, any non-coniferous (Hard wood) timber shall be used for stiles, rails and lipping.

8.5 Face Panel

The face panel shall be formed by gluing, by the hot-press process on both faces of the core, either plywood or cross-bands and face veneers. The thickness of the cross bands as such or in the plywood shall be between 1.0mm and 3.0mm. The thickness of the face veneers as such or in the plywood shall be between 0.5mm and 1.5mm for commercial veneers and between 0.4mm and 1.0mm for decorative veneers, provided that the combined thickness of both is not less than 2.2mm. The direction of the veneers adjacent to the core shall be at right angles to the direction of the wooden strips. Finished faces shall be sanded to smooth even texture. Commercial face veneers shall conform to marine grade plywood and decorative face veneers shall conform to type I decorative plywood in IS 1328.

8.6 Lipping

Lipping, where specified, shall be provided internally on all edges of the shutters. Lipping shall be done with battens of first class hardwood or as specified of depth not less than 25mm. For double leaved shutters, depth of the lipping at meeting of stiles shall be not less than 35 mm. Joints shall not be permitted in the lipping.

8.7 Rebating

In the case of double leaves shutters the meeting of stiles shall be rebated by 8 mm to 10 mm. The rebating shall be either splayed or square type as shown in drawing where lipping is provided. The depth of lipping at the meeting of stiles shall not be less than 30 mm.

8.8 Opening for Glazing

When required by the purchaser opening for glazing shall be provided and unless otherwise specified the opening for glazing shall be as per drawings. The bottom of the opening shall be at a height as shown in the drawings. Opening for glazing shall be lipped internally with wooden batten of width not less than 25 mm.

8.9 Tolerance

Tolerance on width and height shall be + 3 mm and tolerance on nominal thickness shall be ± 1.2 mm. The thickness of the door shutter shall be uniform throughout with a permissible variation of not more than 0.8 mm when measured at any two points.

Adhesive:- Adhesive used for bonding various components of flush door shutters namely, core, core frame, lipping, cross-bands, face veneers, plywood etc. and for bonding plywood shall conform to BWP type, phenol formaldehyde synthetic resin adhesive conforming to IS 848.

8.10 Tests

As per CPWD Specifications.
8.11 Fixing
As per CPWD Specifications.
8.12 Measurements
As per CPWD Specifications.
9.0 STEEL WORK

9.1 All steel work shall be carried out as per CPWD Specifications. (Volume 1) 2009 with up-to-date correction slips.

9.2 All welded steel work shall be tested for quality of weld as laid down in IS 822 :

1970 before actual execution.

10.0 FLOORING

10.1 All work in general shall be carried out as per CPWD Specifications (Volume 1)

2009 with up-to-date correction slips.

10.2 Whenever flooring is to be done in patterns of tiles and stones, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring. Nothing extra shall be payable on this account.

10.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if any, shall be accounted for any extra payment.

10.4 Samples of flooring stones/ Tile (Kota/ Marble/ Granite/ Ceramic tiles/ Vitrified tiles etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. The sizes of stones for flooring shall be of a size not less than 600mmx600mm or as approved by Engineer-in-Charge. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.

10.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location or source.

10.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase is to be laid in single piece.

10.7 The rate of items of flooring is inclusive of Providing Sunken Flooring in Bathrooms, Kitchen, W.C., etc. and nothing extra on this account is admissible.

10.8 Chasing of required width and thickness shall be made in brick work at skirting location so as to flush the external surface of skirting with internal plastering. No extra payment towards making chases in brick work at skirting shall be made and the same is presumed to be inclusive of rate quoted for the item of providing and fixing skirting.

10.9 Proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard etc. so that the wash water flows towards the direction of floor trap. Any reverse slope if found, shall be

made good by the contractor by ripping open the floor/grading concrete and nothing shall be paid for such rectifications.

10.10 The flooring and skirting will be executed as per pattern shown in the Architectural drawings and as per approval of Engineer-in-Charge and nothing extra shall be payable on this account.

10.11 The rate shall include the cost of all materials and labour involved in all the operations. Nothing extra shall be paid for use of cut/sawn stone/ tiles in the work.

11.0 VITRIFIED TILES FLOORING

11.1 The tiles shall be of approved make and shall generally conform to Table 12 of IS15622. The Vitrified tiles of specified sizes shall be used & sample of tiles shall be got approved from the Engineer – in – charge. The Mandatory tests for vitrified tiles shall be got done as per CPWD Specifications (volume – 1) / relevant BIS Code.

11.2 The vitrified shall be as specified in the item. The tiles shall be of specified colours as

shown in the drawings or as approved by Engineer – in – Charge and will be laid
in

pattern as per architectural drawings. Nothing extra shall be paid for laying tiles in specific pattern. The tiles shall be first quality of approved make.

12.0 INTEGRAL BASED WATER PROOFING:-

12.1 The work shall be got executed as per CPWD or manufactures' specifications and from the specialized agency as approved by the Engineer in Charge.

12.2 Contractor shall also submit the names of water proofing specialist along with information about their technical capabilities and list of similar works executed by the specialized agency in the past for the approval of Engineer-in-charge within 30 days from the date of award of work.

12.3 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.

12.4 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.

12.5 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes / spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.

12.6 GUARANTEE BOND FOR ALL WATER PROOFING ITEMS:-

Five years Guarantee bond in prescribed proforma given in the tender document shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor. 10% (Ten per cent) of the cost of water-proofing work shall be retained as Security Deposit and the amount so deducted would be released after 5 (Five) years from the date of completion of the entire work under the agreement, if the performance of the treatment is found satisfactory. If any defect is noticed during the guarantee period, the contractor shall rectify it within 15 days of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of contractor. However this security deposit can be released in full, if bank Guarantee of equivalent amount for Full 5 (Five) years is produced and deposited with the IISER PUNE.

13.0 FINISHING:-

13.1 The work shall be done in accordance with CPWD Specifications -2009 Vol. I to Vol.

with up to date correction slips and the manufacturer's specifications where CPWD specifications are not available.

13.2 The quantity of paint required as per the theoretical consumption including wastages,

if any, shall be procured from the approved manufacturer or his authorized

dealers and deposited with the representative of the Engineer-in-Charge at site.

13.3 The paint shall be obtained in smaller packing (around 20 litre).

13.4 The paint shall be kept in the joint custody of the IISER PUNE and the Contractor and day-to-day account of receipt and issue shall be maintained. However, the safe custody and watch and ward shall remain to be the responsibility of the Contractor. Nothing extra shall be payable on this account.

13.5 The name of the manufacturer, manufacturer's product identification, manufacturer's mixing instructions, warnings and instructions for handling and application, toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container. These details shall be kept in record. The material shall be consumed in the order of material brought to site, first come first consume basis. The Contractor shall obtain and submit to the IISER PUNE the manufacturer's certificate for compliance of the various characteristics of the materials as per the manufacturer's specifications and also copy of the manufacturer's test report for the record.

13.6 Empty containers of the paints shall not be removed from site till the completion of the work unless otherwise permitted and shall be removed only with the permission of the Engineer-in-Charge or his authorized representative at site of ork.

13.7 All arrangements for measuring, dosing etc. at site shall be made by the Contractor.

Nothing extra shall be payable on this account.

13.8 The Contractor shall apply samples of each kind of paint for the approval of shade and colour as per the directions of the Engineer-in-Charge before procuring the paint in mass.

13.9 All incidental charges of cartage, storage, wastage, safe custody, scaffolding, cost of samples and mock ups etc. shall be borne by the Contractor and no claim, whatsoever, shall be entertained on this account.

14.0 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE:-

14.1 The contractor shall be responsible for the protection of the sanitary and water supply fittings and other fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.

14.2 The contractor shall furnish all labour, materials and equipment, transportation and incidental necessary for supply, installation, testing and commissioning of the complete Plumbing / Sanitary system as described in the Specifications and as shown on the drawings. This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the Drawings/Documents as being furnished or installed, but which are necessary and customary to be performed under this contract. The Plumbing / Sanitary System shall comprise of following:

Sanitary Fixtures and Fittings.
Internal and External Water Supply.
Internal and External Drainage.

Balancing, testing & commissioning.
Test reports and completion drawings.

14.3 For the work of water supply and sanitary installations, the contractor shall engage the approved licensed plumbers and submit the name of proposed plumbing agencies with their credentials for approval of the Engineer-in-Charge. For quality control & monitoring of workmanship, contractor shall assign at least one engineer who would be exclusively responsible for ensuring strict quality control, adherence to specifications and ensuring top class workmanship for the installation.

14.4 The work in general shall be carried out as per CPWD Specifications (Volume II)

2009 with up-to-date correction slips.

14.5 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.

14.6 Nothing extra for providing & fixing CP Brass caps /extension pieces wherever required for CP Brass fittings shall be paid beyond the rates payable for corresponding CP Brass fittings.

14.7 The contractor shall examine all architectural, structural, plumbing, electrical and other services drawings and check the as-built works before starting the work, report to the Engineer In-Charge any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Engineer In-Charge without additional cost to the IISER PUNE.

14.8 All the shop drawings shall be prepared on computer through Autocad System based on Architectural Drawings and site measurements. Within two months of the stipulated date of start of the contract, contractor shall furnish, for the approval of Engineer In-Charge, the two sets of detailed shop drawings of complete work and materials including layouts for Plant room, Pump room, Typical toilets drawings showing exact location of supports, flanges, bends, tee connections, reducers, detailed piping drawings showing exact location and type of supports, valves, fittings etc.; external insulation details for pipe insulation etc.

14.9 These shop drawings shall contain all information required to complete the work. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings. Minimum 4 sets of drawings shall be submitted after final approval along with CD. When he makes any amendments in the above drawings, the contractor shall supply two fresh sets of drawings

with the amendments duly incorporated along with check prints, for approval. The contractor shall submit further four sets of shop drawings to the Engineer In-Charge for the exclusive use by the Engineer In-Charge and all other agencies. No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/equipment / installation.

14.10 Shop drawings shall be submitted for approval four weeks in advance of planned delivery and installation of any material to allow the Engineer In-Charge ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved programme.

14.11 Samples of all materials like valves, pipes and fittings etc. shall be submitted to the Engineer In-Charge prior to procurement for approval and retention by Engineer In-Charge and shall be kept in their site office for reference and verification till the completion of the Project. Wherever directed a mockup or sample installation shall be carried out for approval before proceeding for further installation without any extra cost.

14.12 Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.

14.13 All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be in conformity with list of approved manufacturers as per the tender document.

14.14 Balancing of all water systems and all tests as called for the CPWD Specifications shall be carried out by the contractor through a specialist group, in accordance with the Specifications and Standards. The installation shall be tested and shall be commissioned only after approval by the Engineer In-Charge. All tests shall be carried out in the presence of the representatives of the Engineer In-Charge and nothing extra shall be payable on this account.

14.15 The contractor shall submit completion plans for water supply, internal sanitary installations and building drainage work within 15 days of the date of completion. These drawings shall be submitted in the form of two sets of CD’s and four portfolios (300 x 450 mm) each containing complete set of drawings on approved scale indicating the work as installed. These drawings shall clearly indicate complete plant room layouts, piping layouts and sequencing of automatic controls, location of all concealed piping, valves, controls and other services. In case the contractor fails to submit the completion plans as aforesaid, security deposit shall not be released and these shall be got prepared at his risk and cost.

14.16 The CCI/CI/PVC pipe and GI pipe etc. wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs and nothing extra shall be paid for this.

14.17 The variation in consumption of material shall be governed as per CPWD specification and clauses of the contract to the extent applicable.

14.18 The pig lead to be used in joints of 150mm, 100mm, 75mm, 50mm dia of sand cast iron, centrifugally cast (Spun) iron pipes shall be as per relevant CPWD Specifications.

14.19 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials and shall construct suitable godowns, yards at the site of work for storing materials so as to be safe against damage by sun, rain, fire or theft etc., at his own cost and also employ necessary watch and ward establishment for the purpose at his own cost.

14.20 All fixtures and fittings shall be provided with all such accessories as are required to complete the item in working condition whether specifically mentioned or not in the Schedule of Quantities, specifications, elsewhere in this tender document & drawings. The quoted rates shall be deemed to be all inclusive for a complete item fit for use including all materials, labour, T&P, specials, equipment, testing & commissioning etc. Accessories shall include proper fixing arrangement, brackets, nuts, bolts, screws and required connection pieces. Nothing extra whatsoever shall be payable on this account.

14.21 Fixing screws shall be half round head chromium plated brass screws with C.P. washers where necessary or otherwise as provided in the item.

14.22 Porcelain sanitary ware shall be glazed vitreous china of first quality free from warps, cracks and glazing defects and shall conform to relevant BIS codes. Colour of sanitary ware, shall be specified or as selected by the Engineer-in-Charge. Nothing extra shall be payable on this account.

14.23 Horizontal pipes running along ceiling shall be fixed on structural adjustable clamps of approved design. Horizontal pipes shall be laid to uniform slope and the clamps adjusted to the proper levels so that the pipes fully rest on them and are properly secured.

14.24 Contractor shall provide all nuts, bolts, welding material and paint the Clamps with one coat of red oxide and two or more coats of black enamel paint.

14.25 Slotted angle/channel supports on walls shall be provided wherever shown on drawings. Angles/channels shall be of sizes shown on drawings or specified in schedule of quantities. Angles/channels shall be fixed to brick walls with bolts embedded in cement concrete blocks and to RCC walls with suitable anchor fasteners. The spacing of support bolts horizontally shall not exceed 1 m.

14.26 Wherever M.S. clamps are required to be anchored directly to brick walls, concrete slabs, beams or columns, nothing extra shall be payable for clamping arrangement and making good with cement concrete 1:2:4 mix (1 cement: 2 coarse sand: 4 stone aggregate 20 mm nominal size) or as directed by the Engineer-in-Charge.

14.27 The ground colour shall be applied throughout the entire length of pipe. Colour bands shall be superimposed on the ground colour and shall be applied near valves, junctions, joints, service appliances, bulkheads, valves, etc. for clear identification of fluid being carried and to avoid confusion. The relative proportional widths of the first colour band to the subsequent bands shall be 4:1.The minimum width of the narrowest colour band shall be 25 mm.

14.28 Rates for all items quoted shall be inclusive of all work and items given in the above mentioned specifications and Schedule of Quantities and applicable for the work under floors, in shafts or at ceiling level at all heights and depths. All rates are inclusive of cutting holes and chases in RCC and masonry work and making good the same. All rates are inclusive of pre testing and on site testing of the installations, materials and commissioning.

14.29 Cleaning and Disinfection of Pipelines:-

On completion of hydraulic tests and before a pipe is disinfected, it shall be proved to be free from obstruction, debris and sediment by scouring or by any other process which the Engineer-in-charge may prescribe. Upon satisfactory completion of testing and cleaning, the pipelines shall be disinfected as ordered. Chlorine solution shall be applied at the charging point as the pipeline is being filled and dosing shall be continued until the pipeline is full and at least 50 parts of chlorine per million parts of water have been made available and distributed evenly. If ordinary bleaching power is used, proportions will 150 gms of power to 1000 litre of water. If a proprietary brand is used, the proportion shall be as specified by the manufacturer. The treated water shall be left in pipeline for a period as directed but not exceeding 24 hours chlorine residual tests shall be taken at various points along the pipeline. The disinfection process shall be repeated until the sample of water taken from the pipeline are declared fit for human consumption by a recognized laboratory.

14.30 Opening, cut out in slabs, beams as required shall be left out by inserting PVC spouts of required size before casting of RCC members. Nothing extra shall be paid on this account.

14.31 The entire responsibility for the quality of work will however rest with the building contractor only.

15.0 STAINLESS STEEL RAILINGS:

15.1 Providing, fabricating and fixing in position welded built-up section using stainless pipes and connecting plates, of Grade S.S. 304 and of required diameter & thickness as per the directions of the Engineer-in-Charge, at the junctions of doors, on walls, other locations as directed etc. including cutting, welding, grinding, bending to required profile and shape, hoisting, buffing and polishing, cutting chase/embedding in RCC / Masonry, fixing using stainless steel screws, nuts, bolts and washers or stainless steel fasteners as required to make it rigidly fixed & stable and making good the plaster/flooring etc. all complete, at all floors and all levels as directed by the Engineer-in-Charge.

15.2 Rate includes cost of all inputs of materials, labour, T&P, etc. involved in the work and all incidental charges to execute this item. However, for the purpose of payment only the actual weight of the stainless pipes and stainless steel plates provided and fixed shall be measured in kg.

16. TEXTURE FINISH (EXTERNAL)

Texture paint shall be of approved shade and pattern as per approved vendor's specification.

Surface preparation to be done neatly over the plastered surface before the application of base coat. Base coat shall be of required thickness and not less than 2.0 mm thick as per manufacturer specifications , to be applied over the plastered surface by using trowel and putty blade / roller etc. Necessary patterns and grooves shall be formed with in the base coat. Base coat shall be allowed for drying at least for 10-12 hrs before the application final painting. Over this base surface approved shade painting to be applied in two coats.

Wall primer over the plastered surface is to be done based on the selection of texture pattern and finish.

The quoted rate shall include all the above operations including tools and tackles etc.

17. SECURITY RULES

The contractor shall follow at site all security rules as may be framed by the IISER from time to time regarding removal/movement of materials and equipment from site, issue of identity cards, control of entry of personnel and all similar matters.

The contractor and his personnel shall abide by all security measures imposed by the Engineer in charge or his duly authorized representative from time to time any other statutory orders. Nothing extra will be payable on account of stoppage/hindrance of the work.

The contractor, his employees and agents shall not disclose any information or drawings furnished to him by the IISER Any drawings, reports and other information prepared by the contractor/by the Corporation or jointly by both for the execution of the contract shall not be disclosed without

the prior written approval of the Engineer in charge. No photographs of the works or plant within the site premises will be taken without the prior written approval of the Engineer in charge.

18. TEMPORARY APPROACH ROADS

The contractor shall construct and maintain at his own cost, the temporary access roads and approaches to the work site, offices, workshop etc. wherever necessary and in his camp area.

The contractor may use the roads formed by the Corporation in the vicinity of the works for transport of equipment and materials.

If additional haulage roads are required by the Contractor, he shall construct them at his own cost. Location of such roads shall be subject to the prior approval of the Engineer in charge. All roads at the work site including any road formed by the contractor will be made use of by the project, other contractors and agencies at site and the contractor is not entitled for any payment as compensation on this account.

Contractor shall clean the spill over concrete and the other materials over the roads used by him regularly.

19 MATERIAL RECOVERY RATES

Theoretical quantity of cement, steel reinforcement, bitumen and other materials and their permissible variation and rate of recovery in case of less consumption.

(i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2016 with up to date correction slips printed by C.P.W.D.

Variations permissible on theoretical quantities:

(a) Cement

For works with estimated cost put to tender not more than Rs. 5 lakh. 3% plus/minus.

For works with estimated cost put to tender more than Rs.5 lakh. 2% plus/minus.

(b) Bitumen All Works 2.5% plus & only nil on minus side.

(c) Steel Reinforcement and structural steel sections for each diameter, section and category 2% plus/minus

(d) All other materials. Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

S No	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation
1	Cement	Nil	10% extra rate over the basic rate of respective material as specified in the above Clause 10CA.
2	Steel Reinforcement	Nil	10% extra rate over the basic rate of respective material as specified in the above Clause 10CA.

GENERAL TERMS AND CONDITIONS APPLICABLE FOR ALL E&M COMPONENTS

1 GENERAL

1.1The work shall be generally carried out in accordance with tender/bid specifications and the following specifications / rules.

CPWD General Specifications for Electrical work Part I Internal – 2013,
as amended up to date

CPWD General Specifications for Electrical work Part II External, as amended up to date

CPWD General Specifications for Electrical work Part III (Lifts) as
amended up to date.

CPWD General Specifications for Electrical work Part V (Wet Riser & Sprinkler
System) as amended up to date.
CPWD General Specifications for HVAC works, 2004 as amended up to date.
Commercial and Additional conditions for this work.
The Indian Electricity Act, 2003, as amended up to date.
Indian Electricity Rules 1956 amended up to date.

1.2 Order of Preference:

Should there be any difference or discrepancy between the description of items as given in the Schedule of Quantities, technical specifications for individual items of work (including additional and commercial conditions) and IS Codes etc., the following order of preference shall be followed:

Schedule of quantities.
Commercial and Additional conditions for this work.
General Conditions of Contract for CPWD Works.
Drawings.
CPWD General Specifications.

Relevant IS or any other International code in case IS code is not available. These Commercial and Additional conditions are to be read in conjunction with above and in case of variations, specifications given in these additional conditions shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read along with schedule of quantities for the work.

1.3 This specification covers manufacture, testing as may be necessary before dispatch, delivery at site, all preparatory work, assembly and installation, commissioning putting into operation of equipment of all E&M components of the tender.

1.4 The tenderer should in his own interest visit the site and get familiarize with the

site conditions before tendering.

1.5 No T&P shall be issued by the Department and nothing extra shall be paid on account of this.

COMMERCIAL CONDITIONS

2.1 Type of Contract: The work to be awarded by this tender shall be treated as indivisible works contract.

Income tax, GST, labour cess& other statutory deductions etc. shall be made at source as per the prevalent laws. The deductions of Security Deposit, Income-Tax etc. shall be done after calculation of the due payments and net payment shall be reduced accordingly.

RATES

4.1 The rates quoted by the tenderer, shall be firm and inclusive of all taxes (including GST, labour cess etc.,). and all charges for packing forwarding, insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary construction of storage, risks, over head charges, general liabilities/obligations and clearance from CEA. However, the fee for the CEA inspections shall be reimbursed/ borne by the department. EPF & ESI contributions are also reimbursed on production of proof by the contractor.

4.2 The contractor has to carry out maintenance as per CPWD General Specifications and manufacturer's standards for a period of 12 months from the date of handing over. Nothing extra shall be paid on this account.

4.3 In case the same item appears more than once in the schedule of work under the same sub head or among the different subhead of works, the lowest rate quoted for that item elsewhere shall be considered for other items also during evaluation of tender.

COMPLETENESS OF TENDER

All sundry equipment, fittings, unit assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections, and all other items which are useful and necessary for efficient assembly and installation of equipment and components of the work shall be deemed to

have been included in the tender irrespective of the fact whether such items are specifically mentioned in the tender documents or not.

STORAGE AND CUSTODY OF MATERIALS

The agency has to make his own arrangements. No storage accommodation shall be provided by the department. Watch and ward of the stores and their safe custody shall be the responsibility of the contractor till the final taking over of the installation by the department.

CARE OF THE BUILDING:

Care shall be taken by the contractor while handling and installing the various equipment and components of the work to avoid damage to the building. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.

COMPLETION PERIOD

The completion period indicated in the tender documents is for the entire work of planning, designing, approval of drawings etc., arrangement of materials &equipment, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-in-charge.

9 GUARANTEE

9.1 All equipment shall be guaranteed for a period of 12 months (except LED fittings which shall be guaranteed for minimum 5 years), from the date of taking over the installation by the department, against unsatisfactory performance and/or break down due to defective design, workmanship or material. The equipment or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

9.2 The tender shall guarantee among other things, the following:

Quality, strength and performance of the materials used as per manufacturers standards.

Safe mechanical and electrical stress on all parts under all specified conditions of

Operation. Satisfactory operation during the maintenance period.

POWER SUPPLY:

The contractor has to make its own arrangement for power supply required for execution of the work.

WATER SUPPLY:

The contractor has to make its own arrangement for water supply required for execution of the work.

ACCEPTABLE MAKES OF VARIOUS EQUIPMENT:

The acceptable makes of various equipment/components/accessories have been indicated in "Acceptable Makes" appended with the tender documents. The tenderer shall work out the cost of the offer on this basis. Alternate makes are not acceptable.

DATA MANUAL AND DRAWINGS TO BE FURNISHED BY THE TENDERER:

13.1 After award of work

The successful tenderer would be required to submit the following drawings after award of work for approval as per mile stones of tender.

General arrangement drawing (including detailed shop drawings) of all equipment of E&M components as per individual E&M component

Details of foundations for the equipment and the weights of assembled equipment.

c) Any other drawings necessary for the job.

The successful tenderer should furnish well in advance of commencement of work three copies of detailed instructions and manuals of manufacturers for all items of equipment regarding installation, adjustments operation and maintenance including preventive maintenance & trouble shooting together with all the relevant data sheets, spare parts catalogue etc. all in triplicate.

EXTENT OF WORK

15.1 The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipment covered by specifications but all incidental sundry components

necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in details in the tender document in connection with this contract as this is a turnkey job.

15.2 The cables and other items shall be brought at site only after taking correct measurements as per actual requirement of work. Excess quantities shall not be accepted and paid. i.e., Quantity of item brought to site and used in work as per actual requirement shall only be measured and paid irrespective of quantities of BOQ / work schedule.

15.3 In addition to supply, installation, testing and commissioning, of all E&M equipment, following works shall be deemed tobe included within the scope of work to be executed by the tenderer as this is a turnkey job.

Minor building works necessary for installation of equipment, foundation, making of opening in walls or in floors and restoring them to their original condition finish and necessary grouting etc. as required.

All necessary supports may be arranged.

Testing of PTs/CTs for metering & protection purpose & relay calibration & setting.
Getting inspection done & obtaining approval from Central Electrical Authority and local fire authority for energizing the installation. However, necessary fees for inspection shall be borne by the Department.

Exclusion and work to be done by other agencies:
The following shall be excluded from the scope of the work:
Major dismantling of any existing building work.
Electricity supply in sub-station building.

17INSPECTION AND TESTING

17.1 All major equipment shall be offered for initial inspection contractor will intimate the date of testing of equipment at the manufacturer's works before dispatch. The successful tenderer shall give advance notice of minimum two weeks regarding the dates proposed for such tests to the department's representative to facilitate his presence during testing.

The Engineer-in-charge or his representative may witness such testing. The cost of the Engineer's visit to the factory will be borne by the Department. Equipment will be inspected at the manufacturer/ Authorized Dealers premises, before dispatch to the site by the contractor if so desired by the Engineer-in-charge. Engineer-in-charge at his discretion may waive of inspection at factory /at the manufacturer's works before dispatch.

17.2 Copies of all documents of routine and type test certificates of the equipment, carried out at the Manufacture's premises shall be furnished to the Engineer-in-charge and consignee.

17.3 After completion of the work in all respects the contractor shall offer the installation for testing and operation.

18 COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS:

All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works
18.1 covered by this specification.
In particular, the equipment and installation will comply with the following:

Factories Act.
Indian Electricity Rules.
B.I.S. & other standards as applicable.
Workmen's compensation Act.
Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc.

18.2 After completion of the installation, the same shall be offered for inspection by the representatives of the Central Electricity Authority and local fire authority the contractor will extend all help including test facilities to the representatives of CEA/Local fire authority. The observations of CEA/Local fire authority will be attended by the contractor. The installation will be commissioned only after getting clearance from CEA/Local fire authority. Contractor should get inspection done & obtain approval from Central electrical Authority and local fire authority.

18.3 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

INDEMNITY:

The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipment and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the successful tenderer on account of the above.

ERECTION TOOLS:

No tools and tackles either for unloading or for shifting the equipment for erection purposes would be made available by the department. The successful tenderer shall make his own arrangement for all these facilities.

COOPERATION WITH OTHER AGENCIES:

The successful tenderer shall co-ordinate with other contractors and agencies engaged in the construction of buildings, if any, and exchange freely all technical information so as to make the execution of this work/contract smooth. No remuneration should be claimed from the department for such technical cooperation. If any unreasonable hindrance is caused to other agencies and any completed portion of the work has to be dismantled and re-done for want of cooperation and coordination by the tenderer during the course of work, such expenditure incurred will be recovered from the successful tenderer if the restoration work to the original condition or specification of the dismantled portion of the work was not undertaken by the tenderer himself.

The work will be carried out with least disturbance during shifting & shut down taken in consultation with the client department.

INSURANCE AND STORAGE:

All consignments are to be duly insured up to the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

VERIFICATION OF CORRECTNESS OF EQUIPMENT AT DESTINATION:

The contractor shall have to produce all the relevant records to certify that the genuine equipment from the manufacturers has been supplied and erected.

PAINTING:

This shall include cost of painting of the entire installation. The major equipment like HT panel, transformers, L T panel, bus duct, cable trays etc. shall be factory final finish painted. The agency shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. However hangers, supports etc. of bus trucking & cable tray etc. shall be painted with required shade including painting with two coats of anticorrosive primer paint at site.

TRAINING:

The scope of works includes the on job technical training of two persons of Department at site. Nothing extra shall be payable on this account.

MAINTENANCE:

27.1 Sufficient trained and experienced staff shall be made available to meet any exigency of work during the guarantee period of one year from the handing over of the installation.

The maintenance, routine as well as preventive, for one year from the date of taking over the installation as per manufacturer's recommendation.

Approval of drawings, makes and models of equipment/materials for all
E&M components:

28.1 The agency shall submit drawings and details such as makes and models of the equipment/materials offered by him along with specifications for all E&M components to the Engineer-in-charge of the work, before ordering the equipment/materials for approval of the department.

28.2 The Engineer-in-charge shall scrutinize the proposal and approve the makes and models which are acceptable as per the schedule, specifications, conditions of the agreement and inform the agency for procurement. The approving authority shall be technical sanctioning authority of E&M component.

28.3 After approval of the equipment/materials by the department the agency

shall procure the equipment/materials from the OEM/authorized distributor/dealer as the case may be:

Adequate care that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall also ensure that:

Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.

As and when the order is placed for the fittings/ fixtures, cables, switchgears, poles, other main items etc., its copy shall be endorsed to the Engineer-in-charge of work.

The contractor will submit makes & brands of electrical fittings wires & cables, conduits and switchgears, rising mains, poles , outdoor fittings etc. of preferred make list as per tender documents for approval of Engineer-In-Charge, whose decision will be final in the matter.

The firm will be required to procure material directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.

Inspection at factory or at godown, as required, shall be arranged by the firm for a mutually agreed date.

Delivery of material shall be taken up only with the consent of department, after clearance of the material.

Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.

All the materials to be supplied by the contractor shall be procured & brought to site as per requirement at site of work in consultation with department so that these materials are not damaged & their manufacturer's warrantee.

1. Safety Codes & Statutory Regulations:

Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs.1000/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

C.1.1 COMMERCIAL & TECHNICAL CONDITIONS FOR INTERNAL ELECTRICAL INSTALLATIONS

General:

1.1 The work shall be generally carried out in accordance with schedule of quantities and the following specifications and conditions.

CPWD General Specifications for Electrical work Part I Internal – 2013, as amended up to date.

CPWD General Specifications for Electrical work Part II External – 1994, as amended up to date.

Commercial and Additional conditions for this work.

The Indian Electricity Act, 2003 as amended up to date.

Indian Electricity Rules 1956 amended up to date.

Guarantee & Defect Liability Period:

All equipment shall be guaranteed for a period of 12 months (except LED fittings which shall be guaranteed for minimum 5 years), from the date of taking over the installation by the department, against unsatisfactory performance and/or break down due to defective design, workmanship or material. The equipment or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.

The tenderer shall guarantee among other things, the following vis-à-vis specifications.

Quality, strength and performance of the materials used.

Satisfactory operation during the maintenance period.

T-5, CFL fittings, Ceiling fans, Exhaust fans are to be guaranteed for 1(one) Year including lamps.

LED fittings, as a whole including driver are guaranteed for 5 years. All the LED fittings are to be suitably engraved/ stickered inside with for date of handing over.

The guaranty for LED fittings is to be got submitted from the manufacturer also in addition to the guarantee from the contractor. The manufacturer should give undertaking that in case of discontinuation of model and non-availability of spares, they will replace the fittings with equivalent/ high end model in case of manufacturing defect during the warranty period of 5 years in Annexure – V.

Data and Programme to be furnished by the tenderers:
The Contractor shall prepare the programme chart for the execution of the work showing clearly all activities from the start of work to the completion required for the completion of the work within the stipulated period and submit the same to the Engineer-in-Charge within fifteen days after the issue of letter for commencement of the work. The Contractor shall also submit monthly programme and progress reports and update / re-schedule the same every month. These shall be submitted by the contractor in soft copy also besides forwarding hard copy of the same.

Extent of work:

The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning as may be required by the department.

Minor building works necessary like making of opening in walls or in floors and restoring to their original condition, finish and necessary grouting etc. as required to be undertaken.

Verification of correctness of material at Destination:

The contractor shall have to produce all the relevant records to certify that the genuine material from the manufacturers has been supplied and erected.

The main contractor shall also enter into a 'Memorandum of understanding' with the approved associated contractor on Non-Judicial Stamp Paper as per the enclosed proforma and submit this 'MOU' duly completed (duly signed by him and the associated Contractor) before commencement of work.

The main agency shall be responsible for all acts of omissions and submissions of the Associated Contractor engaged by him, even with approval of department.

Approval of the Engineer-in-charge shall be taken well in advance for all the materials to be supplied and used in all the works by the contractor.

The contractor has to make his own arrangements for stores and watch and ward and no extra claim for this will be entertained.

Payments terms:

On account payments for part work (after stipulated and statutory deductions) as assessed by the Engineer – in-charge for the applicable items in the Contract shall be payable at part rates not exceeding the percentage indicated against the stages of work.

A] Items connected with point wiring, circuit wiring, sub-main wiring, power point wiring and light plug wiring.

S.N	Stage of work	Percentage of Rate

A	On laying of conduits with accessories, switch boxes, etc.	35%
B	On drawing of wires i/c terminations, switches, sockets, cover plates etc.	50%
C	On completion of item and after testing and commissioning.	10%
D	At the time of payment of final bill	5%

B] Items of Distribution Boards, MCBs, RCBOs, fittings etc.

S.N	Stage of work	Percentage of Rate
a	On initial inspection of material and delivery at site in good condition on pro-rata basis.	60%
b	On completion of installation on pro-rata basis.	25%
c	On completion of testing and commissioning.	10%
d	At the time of payment of final bill.	5%

For other items, the part rates will be decided by the Engineer-In-Charge of the work and shall be binding on the contractor.

The main contractor shall be responsible for coordinating the activities of all works and will ensure progress of works as per laid down programme.

The main contractor and / or his Associated Contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-charge and will comply with the remarks therein.

The contractor shall make his own arrangement at his own cost for electrical / General Tools and plants required for the work.

The connections, inter-connections, earthing and loop earthing shall be done by the contractor wherever required to be done for energization of the installation and nothing extra shall be paid on this account.
The contractor must be able to work on concrete slabs / walls as and when required and in complete coordination with the civil works. Cutting of chases in the plastered wall shall in no case be allowed. The contractor shall fix conduits and boxes in the walls soon after the brick work is completed and finish the chase to rough surface with proper cement sand mixture. Only in exceptional cases e.g. where cutting of plastered surface cannot be avoided it will be contractor's responsibility to ensure that plastering is done to match the original finish at no extra cost.

The contractor shall remove all the debris due to the E & M works from the site as soon as the work is completed.

The wiring and conduit route shall be marked by the contractor in the drawing first, and shall be got approved from the Engineer-in-charge.

The rupturing capacity of the MCBs shall be 10 KA minimum. The MCBs shall have ISI mark. Quantities of MCBs of different rating of 6 amps to 32 amps shall be brought in consultation with the Engineer-in-Charge or his representative.

All the MCCBs shall be rated for Ics only, as specified.

The copper wire to be used on this work shall be FRLS type and ISI marked.

a. The make of switch boxes shall be the same as that of switches. Only the required knockouts of the switch boxes are to be removed for terminating the conduit pipes with PVC glands / check nuts.

Make of MCB/MCCB shall be the same as the make of MCB DB.

All the switch boxes, MCBDBs are to be covered with plastic sheet / petroleum gelly when installed in brick work till the plastering / painting is done to avoid sticking of cement plaster/ splashes of the paint. Cement plaster / paint are to be cleaned immediately after plaster to avoid rusting of switch boxes and MCB DBs. The plastic sheet is to be removed at the time of handing over.

If two module sockets are used, one blanking plate is to be fixed by the side of socket to avoid interference of larger size plug to PS. Nothing will be paid extra for blanking plate.

The E & M works shall be carried out by the contractor, side by side with the progress of the civil works.

The Contractor shall furnish documentary proof like delivery challans of purchasing Wires, Modular switches & accessories, MCBs, MCBDB, Fittings, accessories and other items from the manufacturers or their authorized dealers to the satisfaction of the Engineer-in-charge.

All PVC conduits accessories shall be of the same make as conduits. The Conduits shall be terminated at switch boxes/metallic junction boxes with suitable PVC glands/check nuts.
Cutting of brick walls shall be with chase cutting machine only. All repairs and patch works shall be neatly carried out to match the original finish and to the entire satisfaction of the Engineer in Charge.

All the sub main and circuit wiring includes loose wire for connections inside switch boxes and MCBDBs. No payment for these loose wires shall be made. However wires within the cubicle panel will be measured and paid under relevant item of work.

All the circuits / sub-main wiring are to be suitably numbered with stickers / marker pen at LT panel, MCBDBs, switch boards (on backside of cover plate) for ease of maintenance. Nothing shall be paid extra on this account.

The contractor shall submit the completion plan separately in triplicate on blue print/ computer plotted with one set on tracing “Cloth” as per Clause-8 of the contract within 30 days of the completion of work. In case, the contractor fails to submit the plan, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.25000.00

To facilitate drawing of wires, 18 SWG GI fish wire shall be provided along with laying of recessed conduit for which no extra payment shall be made. Conduits laid for other services, like fire alarm, PA etc., where wiring is not done along with IEI works, fish wire shall be invariably drawn.

The connection between incoming switch / isolator and bus bar shall be made with suitable size of thimble and cable at no extra cost.

Copper conductor of insulated cables of size 1.5 Sq.mm and above shall be stranded and terminals provided with crimped lugs.

All MS junction box cover should be of phenolic laminated / good quality plastic sheet of thickness not less than 3mm and for which nothing extra shall be paid on the account.

All sub-main wiring shall be terminated in the main board with suitable copper lugs and thimbles for which nothing extra will be paid on this account.

All hardware items such as screws, thimbles, GI wire etc. which are essentially required for completing an item as per specifications will be deemed to be included in the item even when the same have not been specifically mentioned.

All hardware items such as nuts/ bolts/ screws/ washers etc. to be used in work shall be zinc/ cadmium plated iron.

Any conduit which is not be wired by the contractor shall be provided with GI fish wire for wiring by some other agency subsequently. Nothing extra shall be paid for the same.

While laying conduit, suitable size junction boxes shall be provided for pulling the wire as per the decision of the E-in-C.

Materials to be used in work are to be ISI marked. The make of the materials have been indicated in the list of acceptable makes. No other makes will be acceptable. The materials to be used in the work shall be got approved by the Engineer in Charge / his representative before its use at site. The E-in-C shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not acceptable.

Where switches/ sockets/ regulator/ telephone/ TV / internet outlets are to be provided, the same shall be of only one make.

While laying conduits for fire alarm system, sufficient junction outlets are to be provided as per the direction of the Engineer-in-Charge for detectors as required, for which no extra payment shall be made.

Wherever light fittings are proposed to be provided on the false ceiling, the respective light / fan point wiring will have to be brought up to the terminal of the light fittings / fans by the contractor. Flexible metal conduits shall be used for drawing wires from PVC conduits on ceiling to fittings on false ceiling and nothing extra shall be paid to the contractor for the same. The height from false ceiling to ceiling is about 1.2 metres.

The work should be carried out at IISER PUNE, PUNE.
All statutory deductions like GST, Labour welfare cess etc. shall be made from the bills.

INSURANCE AND STORAGE:

All consignments are to be duly insured up to the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

LED Luminaire Specifications.

S.No	Criteria	Specification
1	Luminaire configuration/ technical requirement	As per the description mentioned in BOQ
2	Housing/ body of fitting	CRCA/ Pressure Die cast Aluminum
3	Cover/ Diffuser	Poly carbonate/ Acrylic UV protected/ PMMA for indoor and Toughened glass / PMMA for outdoor.
4	Finish	Aesthetically designed housing with corrosion resistant powder coating.
5	Protection (minimum)	IP 20 for indoor & IP 65 for outdoor
6	Operating Voltage	150V to 270V universal electronic driver with internal surge protection.
7	Frequency	50 Hz
8	Fixture Ambient	+ 40 deg. Centigrade
9	Operating temperature	Range 0 to +55 deg. Centigrade
10	Power factor	>0.9
11	Optical assembly	Array of medium power LEDs/ COB for Indoor Array of medium power LEDs for Outdoor
12	Luminous flux	As per BOQ

13	Efficacy of 210luminaire (including power loss)	>80 lumen per watt for Outdoor > 90 lumen per watt for Indoor
14	Efficacy of LED	>100 lumen per watt
15	Co-related colour temperature	5700 deg. Kelvin to 6500 deg. Kelvin
16	C.R.I.	>70
17	Heat dissipation/ Heat sink	Well-designed thermal management system with aluminum heat sink.
18	LED drive current	Not more than 750 mA
19	Driver efficiency	> 85%
20	Make of LED	CREE/ Philips Lumileds/ Osram/ NICHIA
21	Certificates to be submitted	LM 79 and LM 80

ANNEXURE –V

UNDERTAKING LETTER FROM MANUFACTIRERES OF LED FITTINGS

We hereby agree that

All the LED fittings supplied by us are guaranteed for five years including drivers from

the date of handing over.

In case of discontinuation of model and non-availability of spares, we will replace the fittings with equivalent/ high end model in case of manufacturing defect during the warranty period of 5 years.

For M/S ……..,

…….

(Authorised signatory of manufacturer of LED luminaries)

Counter Signature,

Agency

C.2.1 ADDITIONAL CONDITINS FOR FIREFIGHTING WITH DOWNCOMER SYSTEM

1. LOCATION

The work is to be executed at proposed IISER PUNE, PUNE. The Contractor is advised to visit the site before submission of their tender and ensure that equipment being offered by them shall be accommodated in the spaces available.

2. ACCEPTABLE MAKES
The acceptable make of various equipment are indicated in the list attached.
Alternative or equivalent make will not be accepted.

3. TIME OF COMPLETION

The entire work shall be completed within stipulated time of completion. The time when the materials are to be supplied is given in the mile stones/ Annexure.

QUALITY OF MATERIALS AND WORKMENSHIP

The components of installation shall be of such design so as to satisfactorily function under all conditions of operation.

The entire work of manufacture/ fabrication, assembly and installation shall confirm to sound Engineering practice.

All equipment and materials to be used in work shall be manufactured in factories of good repute having excellent track record of equality, manufacturing, performance and proper after sales service.

Satisfactory operation during the maintenance period.

Firefighting system: - Following type of water based fixed firefighting installations are normally provided in buildings.

a) Down Comer:

In all the above systems, lines are laid in and /or around the building and permanently charged with water from a pressurized supply. In a building any one system or a combination may be provided depending upon application of guidelines laid down in National Building Code of India as amended up to date.

Municipal regulation of the city will also be taken into consideration while selecting and designing firefighting system for a building.

5.1 Control System:-

The starting of terrace pump shall be automatic i.e., with the opening of any hydrant valve or hose reel on any floor, the pump will start automatically with fall in pressure. In addition start/stop push buttons shall be provided at ground floor near internal hydrant for starting the pump manually. Where fire control room has been provided, remote operation of terrace pump may be done fire control room in place of internal hydrant. The control panel for terrace pumps shall be provided near the pumps in a suitable enclosure to avoid unauthorized operation.

The BOQ is comprised of all the items necessary for making provisions of above mentioned firefighting installations as per the provisions laid in NBC - 2005 & CPWD General Specifications for Electrical Works Part V - 2006. However any discrepancy in the BOQ / Specifications noted by the participating bidder shall be brought into the notice of the Department during pre-bid conference otherwise it is construed that tender BOQ/Specifications are acceptable in toto to the participating bidder.

The contractor will make his own arrangements for transportation of his materials up to the site of work, the security and watch and ward of the materials brought at site and the electrical installation executed by him shall be his responsibility till the work as a whole is completed and handed over to the department.

Any damage done to the building or installation during the execution of work shall be made good by the contractor free of cost. In the event of his failure to do so, the same shall be got rectified through another agency at his risk and cost.

The contractor or his authorized representative will have to sign site order book to acknowledge the instruction issued by Engineer-in-Charge or his authorized representative for all matters relating to the execution of work. The instructions noted in the site order book shall have to be complied within reasonable time as decided by the Engineer-in-Charge.

10.1 Intent of Specifications

The work shall be carried out in accordance with the following relevant & applicable codes amended up to date, and to the best available standards of engineering practice, design & workmanship.

Items of BOQ & Technical Specifications of the Agreement,

CPWD General Specifications for Electrical Works: Part I (Internal) 2013, Part II (External) 1995 & Part V (Wet Riser & Sprinkler system) 2006.

Indian Standards Specifications by BIS, IS Code
National Building Code 2016
Indian Electricity Rules & Statutory Regulations.
TAC Regulations
Local Fire Authority Regulations.

10.2 Nothing extra shall be paid for executing the work as per these specifications/ codes. The material having ISI mark shall have precedence over the one confirming to IS Specifications. In case of any discrepancy in the description of any item in the schedule of quantities and the specifications/ code, or if the specifications of any of the items are not available, the decision of the Engineering-Charge or his authorized representative shall be final and binding and work shall be executed in the manner as may be prescribed by him.

11. Execution

11.1 The contractor shall depute well experienced / skilled Engineer / Supervisor / Foreman & licensed wireman / electrician for execution of work. The Engineer-in-Charge reserves the right to reject/remove any person which is not suitable/ fit in his opinion.

11.2 The work shall be executed in well planned & engineered like manner. Poor/Bad workmanship shall not be accepted. The same shall be redone as per the directions of the Engineer-in-Charge, for which no extra payment shall be made.

12. Payment Terms

22.1 No advance payment shall be made.

22.2 On account payments for part work (after stipulated and statutory deductions) as assessed by the Engineer – in-charge for the applicable items in the Contract shall be payable at part rates not exceeding the percentage indicated against the stages of work.
Stage of Work % of rates payable

Delivery at site in good condition after initial inspection (Wherever specified) on pro-rata basis - 75 %

On completion of installation - 15%

The final payment shall be made after Completion, testing & commissioning of the installations to the entire satisfaction of the Engineer-in-Charge, approval from local bodies, Fire Authority and handing over the site/installation to the Department in good working condition - 10%.

The Sub Standard work if any, shall not be accepted & measured unless approved by the competent authority.

12.3 The rates of any Extra/Substituted/Deviated Items of work shall be derived by the Department as per the provisions in the agreement or as decided by the Engineer-in-Charge, and the same shall be binding & acceptable to the contractor.

12.4 The Engineer-in-Charge reserves the right to recover any part/item not executed, due to site requirements etc. The rates of such items shall be derived by the Department as per the provisions in the agreement or decided by the Engineer-in-Charge, and shall be binding & acceptable to the contractor.

13. Completion & Guarantee

13.1 The completion of the work shall be certified by the competent authority of the department, the defects if any shall have to be rectified to the entire satisfaction of the competent authority.

13.2 The contractor shall stand guarantee/warranty for a period of at least 12 months from the date of completion of work or after taking over the installations by the department whichever is later, against any manufacturing defect in material, unsatisfactory performance/ working of system/ installation and / or breakdown due to defective design, workmanship.

13.3 The material / equipment / installation so found defective shall be replaced / repaired free of cost to the satisfaction of the Engineer-in-Charge. The delay in rectification/ replacement shall not be accepted. The department reserves the right to get it done at the risk and cost of the contractor. The decision of the Engineer-in-Charge, shall be final & binding to the contractor.

13.4 The contractor must carry out routine inspection/ testing as the manufacturer's recommendation or as per decision of the Engineer-in-Charge during the guarantee period and attend to the defects taking place during this period. Sufficient number of trained and experienced staff shall be made available to meet any exigency/ emergency at site of work during the guarantee period.

13.5 The contractor shall provide the following drawings for approval of Engineer-in-Charge before commencement of supply/ fabrication.
Schematic Diagram of complete Down Comer System
General layout-Plans of Terrace Pumps
Layout plans of internal Hydrants

Plumbing Drawings showing the layout of entire piping, dia. & length, valves & accessories, plumbing connections etc.

v)Any other drawing the Engineer-in-Charge may deem fit.

14. Works to be arranged by the department

Unless otherwise specified in the tender document, the following works shall be arranged by the department.

a)Vacant space for accommodating all the equipment and components involved in the work.
b)Drain points at suitable location/s.
Terrace tank.

Works to be done by the contractor

Unless otherwise mention in the tender document, the following works shall be done by the contractor and therefore their cost shall be deemed to be included in their tendered cost, whether specifically indicated in the schedule of work or not

Foundation for equipment including foundation bolts and vibration isolation spring and pads.

Suspenders, brackets and floor / wall supports for suspending / supporting pipes / cable trays.

Excavation and refilling of trenches in soil wherever the pipes are to be laid directly in ground including a base treatment and supports.

Sealing of all floors / slabs / wall opening provided by the department or made by the contractor for pipes and cables from fire safety point of view, after laying of the same.

Painting of all exposed metal surfaces of equipment and components with appropriate colour.

Making openings in the walls / floors / slabs or modifications in the existing openings wherever provided for carrying pipeline, cables etc.

All electrical works including cables / wires, earthing etc. beyond power supply made available by the department.

Making good all damages caused to the structure during installation and restoring the same to their original finish.

Approval from local bodies / fire authorities as may be required as per local by-laws. (The contractor’s responsibility shall be limited to the work executed by him). The inspection fee of local bodies / fire authorities shall be borne by the department.
16. Inspection by Chief Fire Officer

After completion of the work to the entire satisfactory of Engineer-in-Charge, the installation shall be offered for inspection by Local Fire Officer or his representative. Testing as desired by the Fire Officer shall be carried out. The contractor will extend all help including man power during testing. The observations of Local Fire Officer in the executed part of works of the agreement under the contract shall be attended by the contractor without any extra cost. Nothing extra is to be paid for testing as above. It shall be the responsibility of the Contractor to get the System / Installations approved / cleared by Local Fire Authority before finalizing the bills.

C.2.2 LIST OF PREFERRED MAKES OF MATERIAL (FIREFIGHTING WITH TERRACE PUMP AND HOSE REELS)

Sr. No.	Product	Make
1.	GI / MS 'C' class pipes duly ISI marked	TATA / Jindal (Hissar)/ ZENITH
2.	Single/Double Headed GM Landing Valve	New Age (Mumbai)/ Safex/ Padmini/ Ceasefire/ GeTech
3.	Sluice Valve	Zoloto/ Leader/ Kirloskar / Deepak/ L&T Valves Limited
4.	CI NRV / Sluice/ Butterfly valves	Zoloto/ Leader/Kirloskar/ Deepak/ L&T Valves Limited
5.	GM gate valves	Zoloto/ Leader/ Kirloskar / Deepak/ L&T Valves Limited
6.	Branch pipe	Safex/ Padmini/ GeTech/ Agni/ Newage Ceasefire
7.	First Aid Hose Reel/ Fire Hose/ Gunmetal Branch pipe/ Fireman Axe	Safex/ Padmini/ GeTech/ Agni/ Newage Ceasefire
8.	Hydrant valve	Newage/ Ceasefire/ Safex/ Kalpana/ L&T Valves Limited
9.	Pressure Gauge	H Guru/ Fiebig
10.	Pipe protection pipe coat	IWL/ Taxa/ Mac-polycoat
11.	Terrace Pump	Kirloskar Model No.KDI837 (7.5 HP) or equivalent of Mather & Platt India Limited/KSB
12.	Air release valve	Giacomini/ AIP valve/ Jaison Industries

13.	Motors/Pumps	Siemens/ Kirloskar/ ABB
14.	2-Way/ 4-Way FBC	Padmini/ GeTech/ Newage/ Safex
15.	LT panels:	CPRI Approved
16.	LT Cables	Universal/ CCI/ Nicco/ Havells/ Gloster/ RPG/ Fortune Art
17.	LV Cable Glands/ lugs	Dowells/ Jainsons/ Braco/ Comet
18.	Fire Extinguishers	Safex/ Minimax/ Safeguard/ Ceasefire
19.	All other items not covered above	As per approval of the Engineer-in-charge.

Note:-
Tenderers quoting for make & models other than above will be rejected.

The department reserves the right to add or delete any materials and Brands in the list of approved materials/brands subject to the recovery of financial implications.

ADDITIONAL CONDITIONS FOR LIFTS
PASSENGER LIFTS AND STRETCHER LIFT

I SCOPE

1. The scope of Bid is to cover design, manufacture, supply, install, test, commission, obtain all necessary statutory approval and maintenance of Lifts during the Guarantee Period, AMC after Guarantee period, in the Building complex as per the Bid documents and Bid drawings.

   The detailed scope of work under this contract is limited to the building with No. of stops as detailed in Bill of Quantities / Schedule of Items.

   a. Design, Manufacture, supply, installation, testing, commissioning of lifts, handing over and free maintenance for a period of Twelve **months** from the date of handing over. AMC for first five years also included in the scope.

   b. All minor civil works such as pocket cutting, grouting of bolts, and correcting and making good the surface in the lift shafts, machine room and landing, fixing of sills, which are required for installing the lifts.

   c. Scaffolding and temporary lighting in the shaft as required for completion of work.

   d. Co-ordination with civil vendor / electrical vendor / BMS vendor / Granite and interior vendor and releasing them work front as necessary at appropriate stages in the project.

   e. Liaison with the concerned department/ other statutory authorities and obtaining the permission from Electricity Board / Lift inspectorate (other statutory authorities from start to completion of work including obtaining completion certificate and any payment towards incidental expenses.

   f. Obtaining all approvals from the authorities for installation and final commissioning.

   g. Clearing all the debris arising out of Contractor's work during/ after installation.

   h. Supply and fixing of structural steel work required for the installation of lift in the shafts and machine rooms.

   i. Handing-over the entire system to the Employer in satisfactory working condition.

   j. Providing adequate training for the lift operators to be employed by the Employer.

k. Loading , unloading and keeping the various components and parts of the lifts safely and in the most professional manner at the site at a designated place as instructed by the IISER / PMC

All electrical works connected with Lifts beyond power supply point shall also be included in the scope of the Bid as per this document.

2. During the guarantee period of one year after successful commissioning of Lift and taking over by the Employer / Architect the Bidder shall carry out comprehensive maintenance of Lift free of cost. After this guarantee period, the Employer will reserve the right to enter into Annual Maintenance Contract as described in the Bid document.

Material Sourcing.

The makes of materials mentioned in the Bid document are indicative only and any other equivalent product of International Repute will be acceptable subject to the products satisfying the specified Technical and Operational parameters and subject to prior approval of the IISER / Architect.

IISER reserves the right to select different agencies for the above works and award the work.

3. The equipment supplied and erected shall be in accordance to updated version of IS- 14665 pertaining to lift provision. Fire protection requirement as per IS and as per National Building Code shall be complied with.

4. The Bidder shall note the following in the Lift Service particulars covered herein.

a) Capacity & Numbers,
b) Travel height, number of stops and openings
c) Type of Drive,
d) Type of Safety Gear, door safety
e) Type of Control and operation
f) Interface leads to be provided for Building Management / Automation System.
g) Amenities and finishes in Lift Car.

5. The Bidder shall furnish any other details relevant to the work and not covered in the tender with financial bearing if any explicitly.

6. As the Tender documents shall form part of the Agreement, the provisions Covered therein should be noted carefully and any deviation felt necessary there from shall be brought to the notice of the IISER / Architect at the time of pre bid meeting for consideration and not after.

7. The Bidder shall give rates for all items given in the schedule of quantity.

8. No extra payment shall be considered either due to escalation or amendments / modifications to statutory Act / Rules issued during the contract period.

9. The Bidder/ Contractor shall be responsible to obtain necessary License from Electrical / Lift Authority, Government of Andra Pradesh.

10. **Terminal points:**

The terminal point (s) Viz. Civil wor*k* and other services shall be as follows:

Civil works:

The Lift shaft, pit shaft to the required dimensions including Plastering and Painting shall be completed by the civil agency. Hoist way / openings of required sizes shall be made available by the civil agency for erection of equipments before its receipt at site. The Civil Contractor shall be responsible for water proofing of the lift pit. All other civil activities for Lift installation shall be within the scope of the Lift Contractor and shall fall within the Lift Contractor's responsibility.

All minor civil works under Lift Contractor's responsibility include Cutting, Chasing and making good of the same at all levels, conceal the conduits and boxes for Panels etc. The minor Civil work shall also include items connected with fixing of Sill plate / Sill slab projection, fixing of buffer springs in the lift, fixing and mounting beams, bearing plate etc.

Electrical Works:

Power supply – 3 Phases, 415 Volts 50 Hz Power supply will be provided at the top terminal landing by the Electrical agency by terminating the incoming supply cable along with earthing at a lift panel board with one incoming and sufficient number of outgoing feeders, each controlled by an isolator of suitable capacity, depending on the number of lift machines.

The Lift Contractor scope shall include providing M.S. Conduits in the Lift shaft for permanent lighting purposes including wiring, fixing of bulk head fittings and holders etc. Likewise 5/15 Amps sockets at various levels in the lift shaft shall be provided by the Lift contractor.

INTERFACE:

The signals from the Fire mode services of the Lifts shall be integrated into the over all fire alarm system, forming part of the Building Management System. For this purpose, sufficient potential free leads shall be provided by the lift contractor for the fire Contractor /Building Management system Contractor who will connect the interface of fire alarm with BMS / BAS system, at appropriate locations from which the

II - PARTICULARS OF LIFT SERVICE REQUIREMENT

General Note :

The bidders to note that in respect to the finish of the car interior, the final specification shall be as per the Client requirement and approval. At the time of Pre-bid meeting, the bidders are requested to come prepared with possible options of car interior finishes.

1	**Description**	**Passenger Lift Student Hostel**
2.	**Capacity**	15 Passengers **/ 1020 Kg**
3.	Number of Lifts	4 Nos.
4.	Speed	1.75 meters per second. (Minimum).
5	Machine & Drive	A.C Gearless synchronous Variable Voltage Variable Frequency drive system with Machine room at the top
6.	Travel	12.60 M (Approx) (G + 2 floors)
7.	Servicing, no. of stops served	Ground floor (Stilt) plus 2 upper floors, servicing 3 stops and 3 landings.
8.	Control & Operation	DUPLEX Group Automatic operation with or without attendant
9	Potential free contacts	Monitoring the ON / OFF / status (position ,direction, emergency alarm, inspection drive) of all Lifts from the Building Management System shall be through potential free contacts and a separate terminal block within the lift control panel which shall be provided by the Lift Contractor including wiring. The wiring from the lift controller to BMS shall however be done by the Contractor for BMS.
10.	Position of Machine Room	Machine room on top.
11	Shaft Size W X D	**2200 mm X 2200 mm (After Plastering)**
12	Lift pit depth from FFL	**2000 mm**
13	**Head Room (Last Landing FFL to slab bottom)**	**4600 mm**
14	Lift Machine assembly location	Lift machine room will be common for all passenger elevators. The layout of the machinery, panels and room sizes will be in the scope of the lift supplier and will take care of the stops and scheduling requirements and shall be as per IS standard .All Machine assembly shall be kept in the over head machine room .
15	Position of Counterweight	At the back of the car
B	**CAR INTERIORS**	
16	Size of Lift car W x D x H (clear inside size)	1600 X 1550 x 2300mm
17	No. of Entrance	1 No.

18.	Door Size	1000 mm x 2100 mm
19.	Car enclosure, Ceiling & Door	Refer BOQ
20.	Full length infra red safety light curtain	Infra - red operated doors safety system to be provided. The Light Curtain to consist of infra - red light beams **(154 criss cross beams)** passing between Car Door Entrances and one side of the Entrance the light source is sent and on the opposite side, sensors are sensing the light source. If an object cuts the light beams the receivers will sense and give door command to the door operating system. This is to sense the passenger movement without being getting in to physical contact of doors with human being or other materials like trolley, perambulator etc., which ensures the highest safety to the passenger and other items transported by Elevator. This infra – red light curtain to operate as low as from 25 mm to a height of 1.8 mtrs., so the system can even detect the movement of child, pet etc., and thus ensures complete safety to users. **Door Pressure limiter : Apart from the full length light curtain, there should be an electronic door pressure sensor . Incase foot or hand is caught in-between the doors & if the light curtain fails, the pressure sensor should sense the obstruction & open the doors.**
21	Fan	Ventilating fan shall be blower fan
22.	Car Light	Diffused fluorescent light by means of LED fitting – lighting to minimum 150 lux at car sill level shall be provided
23	Car floor finish	Floor finish within the car shall be provided by the Interior / Civil contactor. It is the responsibility of the lift contractor to provide a frame work to take the load of Granite or other materials finishing and also to give allowance within the car shall be provided to receive the finishing material, which will be in the range of 15 to 20mm.
24	Car Operating Panel	Two (2) number full size car-operating panels one on either side of car shall be provided with stainless steel finish, flush mounted for passenger lift a) Key operated switch marked to indicate ``attendant''-``automatic'' operation. b) **Luminous white square flush mounted Braille push button for each floor served** c) Door open/close push buttons.

		d) Battery operated emergency alarm Push Button.(Alarm unit in Main floor) e) Push Button for non-stop operation of Lift in attendant mode. f) UP/DOWN Push buttons for attendant mode g) Over-Load warning indicator **(Audible and visual Indication).** **<u>Panel 2</u>** **Luminous white square flush mounted Braille push button for each floor served.** LCD Display located above the car door
c	Landing Entrances	
25	Location of landing entrance in different floors	All doors on the same side (Front only).All landing doors should be two hours fire rated
26	Controls and Indicators at landings.	a) Call registration by High intensity LED luminous Push Buttons, Two nos. for intermediate landings and single push button for terminal landings with indication for UP and DOWN direction of motion. b) Digital Car position and Direction indicators at all Landings above the Entrance, with LCD display in Ground floor and LED display in all other floors. c) **"OUT OF SERVICE" indication in Car and Landing displays during maintenance. Key switch in Car Operating Panel** d) Visual flashing indication on all landings for pre-arrival of car**(Single Chime for UP and Double Chime for DOWN indication)**
27	Lift panel jamb.	Granite or other jambs by Interior / Civil Contractor as decided by the Client
28	Load weighing Device with by pass function.	A load-weighing device to be provided which senses the load. Facility to be provided for stain gauges**/Inductive type** for bypassing registered landings call by a car loaded more than 80%.
29	Leveling device	Leveling accuracy + 5 mm
30	Machine room machinery	The machine shall be gearless traction type designed for heavy duty and suitable for lift operation. Sound reducing materials, preferably rubber pads shall be provided under elevator machine

31	Car Emergency Light and Alarm	Emergency Battery operated power supply for light and alarm to be provided with electric power supply to the car, when the main power supply is not available. The operation to be automatic and no need of manual intervention to be required.

1. The Contractor has to arrange at their own cost including supply, fabricate and erect in position structural steel required for support of machine, brackets for guide rails, facia plates at all landings etc., including three coats of anticorrosive paint of approved make and connected Civil wor*k*s such as cutting of holes, chases etc., in brick work, concrete etc., including scaffolding of walls, floors on partitions together and making good holes for fixing brackets in lift walls, grouting of all bolts, sills, brackets / control board/button boxes, limit switches etc., all in position for all lifts together.

2. **Provision shall also be made available in the controller and wherever necessary for the lift(s) to directly travel to ground floor on any signal from Fire Alarm Control Panel having lead to lift machine room, automatically, ignoring direction of travel and other pending commands as per special condition of the tender.**

3. Requirements indicated in the National Building Code of India in respect of Fire Protection requirements of lifts (Clause 'D-1.5' – Latest Issue) shall be fully complied with in respect of Design, Manufacturing and Erection of the Lifts.

4. Construct a mock-up complete with lift finish. Upon the approval of the same, contractor shall proceed for erection of other lifts.

5. Full set of tools required for maintenance of lifts shall be provided by contractor in the Lift Machine Room.
6. Notice required from the statutory authority shall be obtained.

III. SPECIAL CONDITIONS -TECHNICAL

1. All lifts shall be suitable / compatible for integration with fire alarm system signals and Building Management system. The elevator shall be capable of entering into 'Emergency Fire Mode Service ' upon receiving a signal from fire alarm system. The wiring from lift controller to Fire Alarm system shall be done by the Fire Alarm contractor.

   Monitoring the ON / OFF / status (position ,direction, emergency alarm, inspection drive) of all Lifts from the Building Management System shall be through potential free contacts and a separate terminal block within the lift control panel which shall be provided by the Lift Contractor including wiring. The wiring from the lift controller to BMS shall however be done by the Contractor for BMS.

   All the lifts shall be designated and fitted up as 'Fire mans' Lift' and perform fireman's drive.

   Identification of 'Fireman' lift shall be conspicuously displayed with the words 'FIRE LIFT' in fluorescent paint on the landing doors at each floor level.

   "FIRE MAN SWITCH" shall be provided in ground floor in all the lifts and use the designated "FIRE LIFT" as per local statutory regulation.

All lifts shall ignore current position of operation and travel to ground floor and stop there with doors open by a over riding command under the Emergency Fire mode system. Only the lift designated as Fireman's' lift shall be in operation for the use of fire fighting personnel.

2) The doors of Lift car shall have infrared curtain (Electronic Door detector device) to retract door operation in case of intrusion if any. The door system shall also have a electronic door close limiter

3) Lift car shall have in built load measuring (weighing) device required for adjustment of starting torque to keep the car jerk free at start. Also it shall sense overload and prevent start of the car in that load condition by keeping its door open and sounding the buzzer in the car or by passing further hall calls if the car is loaded to 80% of designed capacity.

4) The techniques of Variable Voltage Variable frequency type drive shall be of to limit motor starting current to less than 2 times the nominal motor current.

5) The operation control shall have device for car landing at floor level (s) with typical Levelling accuracy of + 5 mm.

6) Better quality of installation shall be ensured by using special gauges during installation.

7). The Lift control system shall also have the following features in addition to those otherwise specified in the Bid.

a. By-pass load function to cancel hall calls in the intermediate floors in case lift is loaded to 80% of its capacity.

b. Redundancy & reliability for efficient functioning of Lifts of a group in case of any one or more lift(s) is / are out of operation due to maintenance or otherwise without sacrificing any features of the functioning lifts

c. Electronic chime (gong) and flashing of hall lantern to indicate arrival of a particular Lift car at landing.

d. Flexible choice of parking of lifts at different floors in a bank.

e. Cancellation of false calls using infrared light curtain in the lift car door.

8. The following are the other features to be provided:

1. **Waiting time optimization:**

The Group control shall monitor landing call waiting times, understand the traffic pattern and allocate calls dynamically between the elevators to ensure that the overall waiting time is reduced and maximum waiting time is kept within limits.

Up peak shall be detected by the group control and elevators are dispatched to the ground floor.

2. **Dynamic Call Allocation:**

The Group Control shall be capable of Dynamic Call allocation. Normally, landing calls are pre-assigned to an elevator. This is static allocation, since a changed situation like some one keeping the doors open, can prevent another lift from giving better service.

The Group Control shall be capable of waiting till the last minute to take a call. This allows whichever lift is best suited to take a call at the very last minute.

3. **Sudden Peak detection:**

The Group Control shall be capable of detecting sudden requirement for lift in any floor and meet such a demand. For example, if some one is holding a group meeting at a floor, and the group meeting is over many people come out looking for the elevator. Here the Group Control can sense that a car is fully loaded and dispatch other lifts to meet the demand instantaneously.

4. **Misuse of Landing Calls:**
It is quite common that the passenger standing in a floor will press both the direction hall calls though he wants to go in one direction only. The lift will make an unnecessary stop in the other direction also, though there may not be any one standing on the floor lobby. Unnecessary stops will delay the lift service to others.

The simultaneous registering of up and down calls at the same floor is prevented by a time delay after the first registered call

5. **Door Open Time:**

The door opening time at any floor shall be capable of being set at site depending on the site conditions.

6. The lift safety mechanisms shall include the provision of Automatic Rescue Device (ARD) to rescue the stranded lift passengers in the event of a power failure, operated on dry maintenance - free batteries of required capacity to continuously monitor the normal power supply in the main elevator controller and activate rescue operation within ten seconds of a power failure by which the lift is brought to the nearest landing and doors remain open

IV. SPECIAL CONDITIONS - OTHERS

1.0 DRAWINGS & DOCUMENTS

1.1 The tender drawings are guideline for explaining the scheme. However there may be certain detail, which may require further detailing while actual execution or there may be certain detail which could have been inadvertently overlooked. Such details shall not constitute extra items. The drawings guide the contractor when he works out his quotation. Any item of work not indicated in the drawing but in line with the design and with the thinking shall be deemed to be part of contractual obligation and nothing extra shall be paid to the contractor for the same.

1.2 All work shall be carried out on the basis of approved shop drawings. Drawings furnished shall include, but shall not be limited to

a. Schematic diagrams.
b. Layout drawings.
c. Drawings for control panels.
d. GA drawings for lift shaft, lift pit and Lift machine rooms

1.3 The Elevator Contractor should furnish:

a. Drawings necessary to show the general arrangement of the Elevator equipment and get the same approved from the Employer before the work begins.

b. Drawings / Sketches showing the details of controller in respect of design and metal used for its contract points should be enclosed.

2.0 **DETAILED WORKING DRAWINGS**

2.1 Prior to execution of the work, the contractor shall check all the drawings, specifications and shall within ten days report any errors, discrepancy and/or omissions discovered therein to the Employer and obtain appropriate orders on the same. Any adjustments made by the contractor without prior approval of the Employer shall be at his own risk and cost.

2.2 Shop drawing will not be constituted as an extra item and shall include, but not restricted to mechanical, electrical and structural layout and requirements of the lift machine rooms, lift shafts, lift pits, lift lobbies, lift cabs, operating panels, indicator panels, safety devices, etc., Contractors work can be commenced at site only once the contractors shop drawings are approved by the Employer in writing and after giving a prior notice for commencement of work.

2.3 Shafts allotted for all the traction lifts shall be taken into consideration before ordering the equipment.

2.4 Prior to submission of drawings for approval, the contractor shall be responsible for thoroughly checking all drawings to ensure that they comply with the intent and the requirements of the contract specifications.

2.5 The contractor shall secure the approval of the Employer for his detailed working drawings before proceeding with the work. For this purpose, he shall submit six sets of drawings to the Employer. Any alterations proposed by the Employer shall be incorporated in the drawings by the contractor and the corrected drawings shall be submitted once again in six sets to Employer.

2.6 The approval of the drawing by the Employer shall not be considered as a complete dimensional check but will indicate that the general method of construction and detailing is satisfactory. The contractor shall be responsible for the dimensions and the design of adequate connections, supports, details, etc. and for the satisfactory construction of the work.

2.7 After installation is completed, 6 set of “As built drawings" shall be prepared with full details and submitted to the Employer along with the final bill.

3.0 METHOD STATEMENT

The successful Tenderer shall have to prepare a Method Statement for each item of work including for Quality Assurance and this shall be submitted to the Employer / Project Managers for approval prior to start of work.

4.0 METHOD OF MEASUREMENT

All works shall be measured net as completed or as fixed in place with no allowance (unless specified). No allowance shall be made for narrow width, easy access or difficult position. Any work executed over and above the dimensions given in the drawings or sketches provided by the Client or without written instruction by the Client shall be ignored and no payment shall be made for such extra work.

5.0 TRAINING

5.1 The successful contractor shall fully provide training to Employer personnel in operation and routine maintenance of the elevator plant. Such training shall be imparted during installation of the plant/system and also after commissioning.

5.2 The tenderers shall state the facilities they have for executing the work at PUNE, PUNE if the contract is awarded to them. Details of the set-up with particular reference to their establishment at PUNE, PUNE should be furnished. They are also required to present a list of projects of comparable magnitude and nature which have been executed by them or are under execution with particular reference to those in and around PUNE, PUNE

5.1 Capacity to render prompt and effective after-sales service is an important consideration. Accordingly, the Tenderers shall furnish the details of any service schemes (including the fees payable) that they are in a position to offer and the facilities they have for implementing such schemes. Service facility shall be available at K

5.4 In particular, the tenderer shall note that the successful contractor will be required to post a competent supervisor on full-time basis once the work is taken up. Tenderers shall specifically confirm this point in their tender.

5.5. The tenderers shall quote according to the specifications as far as possible, but where deviations are unavoidable, they shall state the reasons thereof clearly and shall also (in case alternative proposals are made) back them up by furnishing all relevant technical data. They shall also indicate the financial implications.

5.6. No terms and conditions stipulated by the tenderers (whether printed or otherwise) will be accepted. In the event and in case, the tenderers find deviations unavoidable; such deviations shall be with reference to specific clauses in the tender documents. They shall, as far as possible, be so worded that in the agreement which the successful contractor shall enter into with the Owners, they can be introduced as amendments

6.0 Operating Instructions:

The Contractor shall furnish a neatly typed set of operating instructions securely framed and glassed. These instructions shall furnish information and guidance on operating pressures, temperatures, and quantities, etc.. Do's & Don'ts, Safety Measures & Precautions shall also be featured in the Instructions. Two more copies shall be supplied without framing. In addition the contractor shall supply suitably bound 3 copies of Operation and Maintenance Manuals. Such manuals should include wiring diagrams, manufacturer's lists of spare parts with part numbers, exploded views with identification of parts etc. for facility of ordering - all in originals.

7.0 **SPECIAL CONDITIONS - OTHERS**

a) The manufacture, supply and installation of Lifts shall be complete in all respect in a first class workmen like manner and shall cover all work including Structural Steel work necessary for the supporting structures for the Lift machine room and other minor Civil works such as scaffolding etc., required for installation and materials, all complying the requirement of local body if any, and in accordance with the I.S. specifications I.S. 14665 and fire protection requirement as per National Building Code of India.

b) Quality Assurance Plan (QAP) in respect of Lift shall be submitted before commencement of work for approval of the Architects.

c) The Elevators offered shall be in accordance with the safety of lifts in public buildings **CVC Report** for the guidelines for Safety

2. **PARTICULAR:**

(a) Salient features of the Equipment provision as to manufacture; furnishing, finish etc. shall be highlighted with reference to the material input and operational supremacy.

(b) Necessary drawings showing the general arrangements of the equipment etc., shall be furnished. The drawing shall also detail out all items/components, which shall have to be provided by other agencies such as the Main Contractor for Civil and Associated works and the Electrical Contractor and member of consortium during the execution of the main work/installation.

(c) The materials and workmanship of the Lifts and its installations shall be guaranteed and the guarantee shall cover making good of any defects, not due to any ordinary wear and tear or improper use and care, which may develop within One year from the date of handing over of installations duly tested and commissioned.

(d) The Lifts installations shall be maintained for a period of 12 (Twelve) months commencing from the date, the Elevator equipments are taken over to use and the maintenance shall include periodical lubrication of the equipment and adjustment thereof, if any, under supervision and direction of Competent Personnel and replacement of parts that become necessary due to normal wear and tear during the guarantee period. All Operation (operation not intended in the bidder's scope) / Maintenance shall be performed during regular hours of regular working days.

(e) The Lift service particular and General Specification/Condition appended shall be adhered to in all respect, except for specific change contemplated otherwise in the offer.

(g) The local statutory Lift Rules for Lift Control as applicable shall be complied with, No extra payment shall be considered either due to escalation or amendments / modifications to local Act / Rules issued during the contract period.

(h) Bidder / Contractor shall be responsible to obtain necessary License from the Electrical / Lift Inspectorate of Lifts before handing over of the installation(s) by taking timely action in submission of prescribed application form therefore along with documents like completion drawing etc., duly making payment of required statutory fees / charges in the manner specified by the Inspectorate on behalf of the Employer and further follow up action. The expenses will be deemed to be covered by the quoted rates.

The statutory fees /charges payable to Inspectorate shall be reimbursed by the Employer as per actual on evidence of payment.

3. Insurance: -

The work shall have adequate insurance cover as specified by the employer and the employer shall be kept indemnified from all claims unless otherwise provided for.

4 Test at Site: -

Tests at site shall be carried out as per I.S. 14665 part 5

5. Approval of Installations and Completion Certificate: -

Approval/Completion Certificate from the Electrical Inspectorate of Local/ Government for installation and Commissioning of Lifts shall be obtained and made available to the Employer before handing over Lifts at no extra cost. Fees payable to the authorities shall however be made by the employer.

6. Servicing: -

The servicing facilities shall be made available at PUNE, PUNE , for maintenance of Lift(s) during guarantee period of 12 (Twelve) months, free of cost and there after under annual service contract

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V GENERAL / DETAILED SPECIFICATIONS

1. a) Drawings:

The work shall be proceeded with, the preparation of the general arrangement drawings based on the site/building plans handed over for the purpose and submission of the same for approval of the Architects according to the time Schedule specified. Any doubt on dimensions shall be got cleared by verifying at site/building under construction.

Detailed drawings of all items/components, which are to be provided for in the construction by other agencies such as Main Contractor for Civil and associated works or Electrical Contractor shall also be furnished well ahead of the requirement.

b) Project information / data:

Design ambient for electrical equipment is 40°C.

c) Technical:

i) Variations in Power supply:

All equipments shall be capable of working efficiently under conditions of Voltage and frequency variations. The range of variation is as below:

Voltage	:	+5% to -10%
Frequency	:	+ 5%

(2) Steelwork & Civil Works:

All Structural Steel fabrication, supply and delivery to site, erecting it in place, including painting, making necessary holes, chases in concrete masonry etc., aligning and grouting steel members in Cement Concrete of approved proportion including curing shall be done unless otherwise considered separately.

The Structural Steel work shall cover all items necessary for efficient and safe functioning of the lifts such as Machine beams, hoisting beams, guide rails, strut angles at every landings, rail brackets, bearing plates, hitch beams, stretchers, separators, buffer supports, cleats, bolts, etc. All guide rail brackets shall be provided with adequate supports. No claim for extra payment shall be admitted because of missing out any of these aspects while quoting for the work.

Also all Civil works necessary for the installations and commissioning of the lifts such as beams, pedestal for lift buffer springs grouting of all the pockets, holes etc., including fixing in position of indicator call bell and other boxes, grouting of sill and patching around the entrance etc., shall also be covered in the quoted price unless otherwise considered separately. Making good of cutting of walls etc. and rectification of repair works shall be carried out using specifically fire retarding material of approved make.

Scaffolding required for the erection of the lift(s) and hoisting of all machinery and equipment to the required heights shall also be arranged within the quoted price of Lifts.

(3) Work Co-ordination:

The Work shall be co-ordinated well in advance with Architects, Civil Contractor, and Electrical Contractor and IBMS contractor in all respect for satisfactory installation of lifts including location of lift wells, and supporting structures etc.

Safe storage and protection of all equipment and accessories shall be made at no extra cost and loss or damage of the equipment or the accessories until handing over of the lift(s) shall be made good without claiming any extra. Unless otherwise provided for in the Bid / Contract specifically.

VI Technical specification for Emergency Battery Operated Power Supply

1.0 Emergency Battery operated power supply for light and alarm to be provided with electric power supply to the car, when the main power supply is not available. The operation to be automatic and no need of manual intervention to be required.

The bidders are to note that for the Lift car's lights and alarms, there should a half an hour power back up with in the quoted rates.

2.0 **Elevator monitoring**

a) The LIFT CONTRACTOR shall supply, install, wire and commission a Elevator monitoring system in IBMS Room.

b) The system shall consist of the following status & alarm indications

i) A position and direction indication for each lift car.

ii) Normal/ Maintenance indication

iii) Emergency alarm

iv) Fire alarm

v) Lift out of order.

VII SAFETY OF LIFTS IN PUBLIC BUILDINGS CVC REPORT

A Technical Committee of professionals under the Chairmanship of Chief Technical Examiner, Central Vigilance Commission having members from CVC and other departments including Bureau of Indian Standards was constituted by the Government to go into depth regarding all the related issues of safety of lifts in public buildings who gave following recommendations for ensuring hundred percent safety of lifts in public buildings. These recommendations were circulated for information, guidance and compliance by Ministry of Urban Development & Poverty Alleviation vide A.V. series circular No.822 dt. 25.10.2001.

1) While examining the possible causes of accidents in lifts, it was found that in case the lift car stops away from the floor level, there is a possibility of wide gap left between the sill and the lower edge of the toe guard due to smaller length of toe guards provided in the lifts. In order to reduce the gap between the landing sill and lower edge of toe guard so as to prevent any accidental fall through the gap, it is recommended that the minimum length of toe guard should be 700mm for lifts with speeds of 1.5 mps and 1000mm for lifts with speeds above 1.5 mps.

2) Another potential cause of accidents could be the attempts made to open the landing door lock of lower floor in case the car stops away from floor level due to power failure. Since the car door can be opened in case of power failure so as to improve the ventilation and avoid claustrophobic situations etc. as outlined in IS 14665 (part 2/sec 1): 2000 para 10.9.1, there is a tendency among trapped passengers to make attempts to open any accessible landing door which can be opened by a electromechanical latch in the landing doors as the lock is accessible through open car doors. This attempt in panic may result in accidental fall into the lift pit. In order to ensure that the trapped passenger do not attempt opening the landing door, the electromechanical latch should be so designed that it is inaccessible or invisible to the passengers in the car.

3) Though para 8.4.3 of IS 14665 (Para 2/sec 1):2000 recommends for provision of either an emergency signal or a telephone inside the car but as a general experience, it is seen that over a period of time these devices become inoperative due to one reasons or the other. Therefore, in order to have at least one device of communication functioning at all the times, as an alternative arrangement, it is recommended that the provision of both i.e. telephone with minimum two connections one at the operator's room and other at guard room and the emergency signal with re-chargeable batteries as source of supply be made in the lift cars.

4) The device used for emergency signals should incorporate a feature that gives a immediate feed back to the car passengers that the device has worked property and the signal has been passed on to the intended agency.

5) The Automatic Resource Devices (ARD) meant for the purpose of bringing the lift car to the nearest landing doors, are being used selectively and is generally restricted to commercial building having heavy traffic. However, frequent power failures being the common phenomenon, it is recommended that provision of ARD should be made mandatory in all the lifts in public buildings.

6) Frequent power failure from regular sources of supply has been a major cause of concern for the equipments and machinery driven by electric power. Therefore, standby source

of supply has become indispensable. Though in commercial building the standby supply is generally provided but in residential buildings, the provision of standby supply is still a lower priority. In order to avoid any accidental trapping because of power failure, in residential buildings, DG sets of suitable capacity with AMF panel should be provided as back up for the lifts.

7) In order to avoid accidental closure of doors while boarding or alighting the car, normally infrared cells are provided in the doors. But it has been experienced that there is a possibility of tampering with the devices by blocking the holes etc. to keep the doors open for longer time. To avoid this, it is recommended that a tamper proof infrared curtain covering the entire height of the door should be provided in the lift doors.

8) It is seen generally, that though the instruction on DO's and Don'ts , as per provision of the relevant IS, are displayed in lift cars but the same are either displayed in inconspicuous location, or are very small in size or are in one language only. To make these instructions serve the intended purpose, and not a mere compliance of relevant IS clause; it is suggested that these instructions should be displayed at a conspicuous location with larger and understandable script and should be written in Hindi, English and regional language.

9) The name, purpose and numbering of the push buttons / phone/ alarm should be displayed clearly and in the same sequence as indicated in the instructions shown against point (8) above, it is worthwhile to mention here that due to long and continuous use of buttons, the numbering and indications on the buttons get faded over a period of time. Necessary preventive arrangement may be made to make the same as fade-proof.

10) Apart from the written instructions in the lift cars as suggested against point (8) and (9) above possibility of providing recorded audio clipping in the passenger cars may be considered. The clippings may run continuously and sequentially in Hindi, English and regional language giving instructions on DO's and Don'ts for safety of the passengers.

11) A load plate along with overload alarm, giving the rated load and permissible maximum number of passengers should be filled in each lift car in a conspicuous position.

12) For the purpose of identification, the lift number should be displayed outside the landing door, inside the car and in the machine room. This numbering may be used as reference for the purpose of routine / preventive maintenance, for operating from machine rooms and reporting of any incidents etc.

13) All the electrical supply lines and apparatus in connection with the lift installation should be so constructed, installed, protected, worked and maintained that there may be no danger to persons there from. To do that, all the exposed parts should be duly insulated, equipments should be securely earthed in accordance with the recommendations made in IS: 3043 and also in a conformity with the latest provisions of Indian Electricity rules.

14) The machine rooms and all other rooms containing lift equipment should be provided with adequate illumination. The lux level should be at least 200 lux. Provision of adequate lighting in the entire lift shaft should be made mandatory.

15) The provision of fireman's control / switch for the purpose of using the lift for carrying out fire control exercise as per provisions of relevant IS specifications should be made mandatory.

16) There have been quite a few instances, wherein the accidents do occur due to machinery failure which in turn is attributed to the human failure occurred in one or the other form like deploying of unskilled personnel or due to mishandling of the equipment etc. The reasons for such occurrences are the inherent shortcomings and adhosim in the award of the work of maintenance / operations to inexperienced and less reputed firms. The task of maintenance and operation should be entrusted to reputed and experienced agencies, who deploy only skilled persons. As far as possible the manufacturer of the lift should be considered for undertaking maintenance and operation so as to make the system more accountable.

17) There are some cases in which serious fatal accidents happened during rescue operation for taking out the trapped passengers. Such accidents occur due to improper handling of rescue operation or inadequate accessories required for rescue purpose. In order to avoid such occurrences, it is strongly recommended that personnel engaged for rescue operation should be fully equipped and trained in handling the rescue operation. It is essential to carryout the rescue exercise in accordance with the instruction contained in para 10.10 IS-14665 (par12)/sec1):2000.

18) It is felt necessary to maintain a log book containing all the details Viz. Lift number, names and addresses of the operators / maintenance personnel, details of the agency undertaking maintenance and operation and details of Routine / Preventive maintenance of lifts etc. The logbook should be duly authenticated by a competent authority and also by a representative of residence in case the lift is installed in residential area.

19) The mock drill exercise for all the lifts should be made mandatory and should form part of Annual Maintenance Contracts. The responsibility of conducting mock-drills on regular pre-decided periodicity should lie with the agency undertaking the AMC, and the same should be duly verified by the resident's representatives.

All the suggestions brought out in the above para should be considered in addition to and for in conjunction with the relevant IS Specifications and may not be deemed to have superseded any IS specification relevant to the lifts. In case of any clash the more stringent measure should be considered for implementation purpose.

Note : The bidders should note that the above CVC report should be read with any recent notification or publication specific to the scope bid meeting.

ANNEXURE III

LIST OF APPROVED MAKES

CIVIL & STRUCTURAL

S.No.	Material		Make
1.	Ordinary Portland GREY Cement 53& 43 Grade		a Ultra tech b ACC c Birla Ambuja
2.	Plain Portland Pozzolona (PPC)		a. Ultra tech b. ACC c. Birla Ambuja
3.	Ready Mix concrete		a. ACC b. Ultra tech c. R
4.	Water proofing Compound & Concrete admixture		a. Fosroc b. Sika c. BASF
5.	HYSD (TMT) Bars		a TISCO b SAIL c RINL
6.	Structural Steel		a. TISCO b. SAIL c. JINDAL
7.	Aluminum Sections		a. Bhoruka b. Hindalco c. JINDAL
8.	Paints		a Asian Paints b ICI c Berger
9.	PVC Water Bars		a Fixopan b Syntex c BASF
10.	MS Pipe &Tubular sections		a. TISCO

S.No.	Material		Make
			b. SAIL c. JINDAL
11.	Precast Cement concrete tile		a Nitco b Ultra c Johnson d Dura Crete
12.	Glazed Ceramic tiles		a. Johnson b.Regency c. Somany
13.	Glazed Ceramic designer tiles		a.Kajaria b.Nitco c. Johnson d.Imola
14.	Vitrified tiles - full body		a RAK b Asian c Euro d Johnson
15.	Vitrified tiles		a. RAK b. Asian c. Johnson d. Nitco
16.	Water proof cements paint		a. Snowcem India Ltd. b. Asian (Apex) c. ICI
17.	Hardware		a Geze b Dorma c Lock wood
18.	Flush door		a. Jackson b. Green ply c. Kenwood d. Archid ply
19.	Texture finish (External)		a. Asian

S.No.	Material		Make
			b. Spectrum c. Heritage d. Renovo
20.	Texture finish (Internal)		a. Asian b. ICI c. Heritage
21.	Laminates		a. Century ply b. Archidply c. Merinolam d. Green ply
22.	Veneer		a. Jacson b. Archidply c. Century ply
23.	Ply boards		a. Century ply b. Green ply c. Archid fly
24.	Fasteners		a. Hilti b. Fischner
25.	Fire Doors/Steel Doors		a. ShaktiMet b. System Schroders c. HORMANN
26.	XPS Boards		a. BASF b. Supreme c. Owns corning
27.	Lifts		a. Kone b. OTIS c. Schindler
28.	Polycarbonate sheets		a. GE b. Poly Clad
29.	Concrete Pavers		a Basant Beton or equivalent
30	BWR Plywood		Greenply Centuryply Archidply
31	Laminates		Merino, Century Greenlam, Archidlam

APPROVED MAKE OF MATERIALS

PLUMBING & SANITARY

S.No.	Material		Make
1	SANITARYWARE		a. HINDWARE b. Johnson c. KOHLER d. PARRYWARE
2	STAINLESS STEEL SINK		a.PARRYWARE b.DIAMOND c.NIRALI
3	SENSOR		a.AOS SYSTEM b.JAQUAR c.KOHLER
4	CP FITTINGS		d. JAQUAR e. ESS ESS
5	CONCEALED FLUSH VALVE		d JAQUAR e ESS ESS
6	U PVC SWR PIPE/FITTINGS		a. SUPREME b. FINOLEX c. PRINCE
7	CPVC PIPES AND FITTINGS		d. ASTRAL e. ASHIRVAD
8	BALL VALVE		d RB e LEADER
9	BUTTER FLY VALVE/CHECKVALE		d LEADER e NORMEX
10	Y' STRAINER		d. LEADER e. NORMEX
11	AIR RELEASE VALVES		e VB f OR

S.No.	Material		Make
12	NON RETURN VALVE		a LEADER b NORMEX
13	WATER SUPPLY PUMPS		a. GRUNDFOS b.KIRLOSKAR c.TEXMO d. ITT
14	SFRC COVER		b. GPI c. NECO
15	CI GRATING		a. NECO
16	STONE WARE PIPES & GULLY TRAPS		a. PERFECT b. ANAND c. PARRY
17	BEVELLED EDGE MIRROR		a. ATUL b. MODI GUARD
18	SOLAR WATER HEATER		a..TATA-BP b.VENUS

Electrical

S.No.	Material	Make
1	Instrument Transformers Indicating Meters	a) Kappa b) Kalpa c) Voltamp
2	Analog	a) Meco b) Rishab c)AE
3	Digital	b) Meco c) AE d) Socomec e) Conzerv f) SECURE
4	Indicating Lamps	a) GE b) SCHNEIDER c) TEKNIC d) L&T e) ALTOS, (MULTIPLE LEDs)
5	PLC / Digital Load Monitor / Power monitor	a) Electrex b) Allen Bradley c) GE d) Schneider e) Conzerv
6	Panel Accessories / Terminal block	a) Dirak b) Elmax c) Phoenix d) Wago
7	Timers	a) L & T b) Minilec c) Seimens d) GE e) Schneider
8	TVSS	a) ASCO OR EQUIVALENT
9	Cable Terminating Kits	a) Raychem Heat Shrinkable
10	Earthing	a) Erico b) Nimbus

S.No.	Material	Make
		c) Ashlok
11	MV Switch Boards (LT panels)	a) Accusonic / b) Load Controls / c) Elins / d) Lotus Switchgear / e) Pace Switch gears / f) Suvarna Electricals g) Switch Brake PUNE
12	Moulded Case Circuit Breaker	a)GE (Spectra / Record) b) Schneider (COMPACT) c) L & T (D SINE) d) ABB e) MDS Legrand
13	MCB Distribution Board	a) Legrand b) Schneider c)Seimens
14	Miniature Circuit Breaker	a) MK b) Legrand
15	ELCB / RCBO	a) Legrand b) L & T
16	Earth Leakage Relay	a) L & T b) Legrand
17	LT Cables (XLPE)	a) Polycab b) Finolex
18	PVC Insulated copper wire FRLS	a) Finolex b) Polycab
18	Cable Glands	a) Dowells b) SMI
19	PVC Rigid conduits	a) Precision b) DIAMOND
19	M S Conduits	a) BEC b) BI
20	Switches, Sockets, Plug etc	a) Legrand Mosaic b) MK
21	Ceiling rose / HOLDERS	a)Anchor b) MK
22	Light fitting, Flourscent CFL/GLs	a) Philips b) Wipro

S.No.	Material	Make
		c) Durlum d) Schreder
23	LED Light fitting	a)Wipro b)Philps c) Syska
24	Ceiling Fan	a) Crompton greaves (high breeze) b) Bajaj Super Model
25	Exhaust Fans	a) Alsthom b) Almonard
26	Telephone Cables	a) Delton b) Finolex c) Polycab
27	Telephone Sockets	a)Anchor / b)MK (Suitable to mount on Legrand DLP trunking) /
28	Terminal Junction boxes	a)Elmex
29	Power Socket Industrial type	a) Legrand b) MK
30	TV Outlet	a)Anchor b) Legrand c) MK
31	Cable trays	a)Storrax b) Skaber c)Profab
32	Metallic raceways	a) Storrax b) Skaber c) Profab
33	PVC raceways	a) LEGRAND b) MK
34	Aluminium raceways	a) LEGRAND b) MK
30.	Surface / Recess mounted FTL fixtures	a) Philips b) Wipro
31.	Recess mounted down lighter	a) Philips b) Wipro
32.	Wall mounted luminaire	a) Philips b) Wipro c) Schreder
33.	Data Cable - CAT-6	a) D-Link b) Legrand. c) Polycab
34.	External light fittings/ Garden Light fittings /Achitect Light	a) Wipro b) Philips c) Schreder d) Durlum

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Additional Electrical (B)

S.No.	Material	Make
1	Instrument Transformers Indicating Meters	a) Kappa b) Kalpa c) Voltamp
2	Analog	a) Meco b) Rishab c)AE
3	Digital	b) Meco c) AE d) Socomec e) Conzerv f) SECURE
4	Indicating Lamps	a) GE b) SCHNEIDER c) TEKNIC d) L&T e) ALTOS, (MULTIPLE LEDs)
5	PLC / Digital Load Monitor / Power monitor	a) Electrex b) Allen Bradley c) GE d) Schneider e) Conzerv
6	Panel Accessories / Terminal block	a) Dirak b) Elmax c) Phoenix d) Wago
7	Timers	a) L& T b) Minilec c) Seimens d) GE e) Schneider
8	TVSS	a) ASCO , b) Schneider, c) ABB
9	Cable Terminating Kits	a) Raychem Heat Shrinkable, B) 3M, C)CCI

10	Earthing	a) Erico b) Nimbus c) Ashlok
11	MV Switch Boards (LT panels)	a) Accusonic / b) Load Controls / c) Elins / d) Lotus Switchgear / e) Pace Switch gears f) Suva rna Electricals
12	Moulded Case Circuit Breaker	a)GE (Spectra / Record) b) Schneider (COMPACT) c) L & T (0 SINE) d)ABB e) MDS Legrand
13	MCB Distribution Board	a) Legrand b) Schneider c)Seimens
14	Miniature Circuit Breaker	a) MK b) Legrand C)siemens, d)Schneider
15	ELCB / RCBO	a) MK b) Legrand C)siemens, d)Schneider
16	Earth Leakage Relay	a) MK b) Legrand C)siemens, d)Schneider
17	LT Cables (XLPE)	a) Polycab b) Finolex , c) CCI
18	PVC Insulated copper wire FRLS	a) Polycab b) Finolex , c) CCI
19	Cable Glands	a) Dowells b)SMI, C)CCI, d)Electrowerke

20	PVC Rigid conduits	a) Precision b) DIAMOND, C)Finolex , d) polycab
21	M S Conduits	a)BEC b) BI,
22	Switches, Sockets, Plug etc	a) Legrand Mosaic b) MK, c)Schneider, D) Anchor(Ave)
23	Ceiling rose / HOLDERS	a) Legrand Mosaic b) MK, c)Schneider, D) Anchor(Ave)
24	Light fitting, Flourscent CFL/GLs	a) Philips b) Wipro c) GE
25	LED Light fitting	a)Wipro b)Asian, C) Siska
26	Ceiling Fan	a) Crompton greaves (high breeze) b) Bajaj Super Model c) Usha
27	Exhaust Fans	a) Alsthom b) Almonard, C) Usha, D) CGL
28	Telephone Cables	a) Delton b) Finolex c) Polycab
29	Telephone Sockets	a)Anchor b)MK (Suitable to mount on Legrand DLP trunking) /
30	Terminal Junction boxes	a)Elmex
31	Power Socket Industrial type	a) Legrand Mosaic b) MK, c)Schneider,
32	TV Outlet	a)Anchor b) Legrand c) MK

33	Cable trays	a)Storrax b) Skaber c)Profab
34	Metallic raceways	a) Storrax b)Skaber c) Profab
35	PVC raceways / PVC DLP trunking	a) LEGRAND b) MK, C) Schneider,
36	Aluminium raceways	a) LEGRAND b) MK, C) Schneider,
37	Surface / Recess mounted FTL fixtures	a) Philips b) Wipro c) GE
38	Recess mounted down lighter	a) Philips b) Wipro c) GE
39	Wall mounted luminaire	a) Philips b) Wipro c) GE
40	Data Cable - CAT-6	a) D-Link b) Legrand. c) Polycab
41	External light fittings/ Garden Light fittings	a) Philips b) Wipro c) GE
42	Switches, Sockets, Plug etc	a) Legrand Mosaic b) MK, c)Schneider, D) Anchor
43	Base plates and face plates	a) Legrand Mosaic b) MK, c)Schneider, D) Anchor
44	Full loaded patch panels	D link or RR
45	Data patch cords	D link or RR
46	PVC Rigid conduits	a) Precision b) DIAMOND, C)Finolex , d) polycab

47	Cable Terminating Kits	a) Raychem Heat Shrinkable, B) 3M, C)CCI
48	Fire Alarm Control Panel	Notifier / Edward / Bosch / Cooper/ Siemens
49	Repeater Panel	Notifier / Edward / Bosch / Cooper/ Siemens
50	Addressable Smoke Detector	Notifier / Edward / Bosch / Cooper/ Siemens
51	Addressable Multi Sensor Detector	Notifier / Edward / Bosch / Cooper/ Siemens
52	Addressable Heat Detector	Notifier / Edward / Bosch / Cooper/ Siemens
53	Addressable Strobe Cum Sounder	Notifier / Edward / Bosch / Cooper/ Siemens
54	Addressable Sounder / Hooter	Notifier / Edward / Bosch / Cooper/ Siemens
55	Addressable Manual Call point	Notifier / Edward / Bosch / Cooper/ Siemens
56	Addressable Monitor Module	Notifier / Edward / Bosch / Cooper/ Siemens
57	Addressable Control Module	Notifier / Edward / Bosch / Cooper/ Siemens
58	FRLS Armoured Cable	Finolex /Polycab /Lapp
59	Other Items	Approval of Enginer Incharge.

FIRE HYDRANT SYSTEM / SPRINKLER SYSTEM

S.No.	Material		Make
1	Pumps		a. Kirloskar b. Beacon c. Mather & Platt
2	Motors		a. Kirloskar b. Crompton Greaves c. ABB
3	MS Pipes		a. Jindal b. TATA
4	Sluice Valves		a Kalpana b Upadhaya
5	Non-Return Valves		a. Normax
6	Hydrant Valve, Branch Pipe		a. NewAge b. Sukan c. Winco
7	RRL Hose		a. Newage b. Chataria
8	Hose Box		a. Fabricated
9	Hose Reel Drum		a. Fabricated
10	Coating & Wrapping		a. Integrated Water Proofing
11	Control Panel /Auto Start Panel		a. Bright Engg b. Excel
12	Pressure Gauge		a. Waaree b. Wika c. Pricol
13	Pressure Switch		a. Infoss b. Danfoss c. Switzer
14	Cable		a. Polycab b. CCI c. Universal
15	Alarm Valve		a. HD

S.No.	Material		Make
			b. UL approved
16	Flow Switches		a. Switzer
17	Gunmetal Valve		a. Netu b. Hawa c. Leader d. zoloto
18	Batteries		a. Exide b. Amco
19	Pipe Fittings		a. VS b. BM
20	Supports		a. Hitech b. Sakthi
21	Nuts & Bolts		a. Precision b. Unbrako c. Equivalent
22	Butterfly valve		a. Audco b. Intervalve c. Equivalent
23	Fire Extinguishers		a. Minimax b. Cease Fire
24	Fire brigade inlet		a. New age
25	Hydrant Valve & Branch Pipe		a. Newage b. Sukan c. Winco d. Shah Bhogilal

ANNEXURE - IV

HAND BOOK ON HEALTH AND SAFETY AT WORK

FOR

CONTRACTORS WORKING IN THE PROJECT

SECTION - 1

INTRODUCTION:

This document defines the operations undertaken by Principal Contractors and their sub-vendors on Project premises, which can give rise to hazards to those engaged in the work and others who may be working, standing or passing in the vicinity.

Compliance with NBC norms on construction safety for ensuring safety during construction

It is the **IISER's** endeavour to secure a high standard of safety at site. Therefore, Contractors and sub-Contractors must know their duties under common law, both for establishments, and their own employees and to conduct their business and methods of work to conform to the best practices.

Before the **IISER**, allows any contracting or sub- contracting firm to carry out work on its premises, the **IISER** insists that Contractors and sub-Contractors understand their duties regarding safe practices for themselves, others and regulations covering the type of work they will be carrying out.

In furtherance to this policy, rules herein have been devised to bring to the notice of Contractors and sub-Contractors, some of the more common hazards, and appropriate preventive measures in connection with the erection, construction, cleaning, painting, alteration or demolition of plant, machinery and buildings.

The **IISER** is confident that the observance of these rules will be no hindrance to progress the work, but will assist in the avoidance of accidents.

IT IS IN A TERM OF ALL CONTRACTS BETWEEN THE **IISER** AND CONTRACTORS THAT THEY AND ANY SUB-CONTRACTORS, APPOINTED BY THEM COMPLY WITH THESE RULES AND THEIR CO-OPERATION IS THEREFORE OBLIGATORY IN CARRYING OUT THE PRECAUTIONS LAID DOWN.

Section - 2 : Details general rules which are applicable to most Contractors and sub-Contractors.

Section - 3 : Details specific rules which must be followed where applicable, where a particular type of work is to be undertaken.

All Contractors Supervisors will make sure that the Engineering Services / Safety Manager on Project site are notified as and when he and others (Sub-Contractors) are reporting for work on that site.

SECTION 2

RULES FOR GENERAL OPERATIONS:

2.1 **ACCESS:**

Nothing shall be done or omitted to be done by Contractors or Sub-Contractors or their employees to render unsafe or obstruct:

- Any means of access to the places at which people are required to work.
- The passage of people and / or vehicles whether on a defined gangway or not, unless permission is obtained from the designated safety officer.
- Access for emergency apparatus, such as firefighting equipment.
- Contractors and sub-Contractors shall nevertheless provide adequate fencing, lighting and warning signs to ensure safety at all times.

2.2 **ACCIDENT AND INCIDENT REPORTING:**

All notifiable accidents, dangerous occurrences and potential hazard situations shall be reported to the safety officer at site.

Injuries are to be treated by experienced medical staff available at site.

2.3 **CONTRACTORS AND SUB-CONTRACTORS' TOOLS AND EQUIPMENTS:**

All Contractors and sub-Contractors tools and equipment must comply with statutory regulations and approved codes of practices.

2.4 **HAZARDOUS MATERIALS:**

The Contractor must inform the safety officer, prior to commencement of work, procurement of materials connected with the contract work of a hazardous nature. The Contractor will have to secure storage for any such material.

2.5 **DUST AND FUME CONTROL:**

Contractors and sub-Contractors must inform the safety officer at the Project site of all processes producing dust or fumes, and under the conditions as laid down in the relevant Act of Government the safety precautions are to be fulfilled.

2.6 **FIRE HAZARDS AND PRECAUTIONS:**

When at site, all fire regulations, as well as regulations under relevant Sections of the relevant Act of Government of must be observed at all times.

2.7 **MACHINERY SAFETY :**

Contractors and sub-Contractors working at the Project site must not remove or displace any guard, fencing or other safety equipment which is designed to protect personnel or machinery or any place where safety equipment has been provided without the written permission of the safety officer or his designated representative.

On completion of any work, any guards that had to be removed must be replaced immediately and whilst work is being carried out, machinery must not be operated. The requirement of the relevant Act must be followed:

2.8. **HOUSE-KEEPING:**

The House-keeping standards employed by Contractors and sub- Contractors, must be as good as the **IISER**. Care must be taken by all responsible people to ensure that the standard of house-keeping for all establishments is known and understood.

2.8.1 Housekeeping and hygiene go hand in hand with safe working practices. Contractors and sub-Contractors must leave work areas in a clean, tidy and safe condition at the end of each working period.

2.8.2 Special attention must be paid to potential fire hazards, trip points and equipment left in a hazardous condition.

2.8.3 Contamination of any product (by drill swarf sawdust, oil, salient, paints and materials etc.) must be avoided at all costs, and the officers of the **IISER** are empowered to stop any activity which could result in contamination.

2.9. **NOISE:**

Contractors and sub-Contractors working at the Project site must obtain permission from the safety officer if the processes being employed to carry out that work significantly increase the ambient noise level in that area being worked.

2.10. **OVERHEAD WORKING:**

No work may be carried out above the heads of people or over gangways or roads, until all precautions have been taken to ensure the safety of the persons below, and until permission is given by the safety officer. Each specific site of overhead working will require consent from the safety officer. This will be given after satisfactory inspection.

Work may be carried out in the vicinity of power cables only when permission is obtained from the safety officer and/or **IISER** Project Engineer.

Work connected with overhead safety includes the movement of long metal objects, machinery, jibs, masts, arms or other elevated parts.

2.11 **WORKING AT HEIGHT:**

All temporary structure, erected by Contractors or sub-Contractors for the purpose of allowing their staff to work at heights of more than 2 M. above floor level, must be constructed in accordance with the Safety Regulations laid down.

Whenever possible, ladders are to be made of wood and in good condition. Metal ladders must not be used where there is any possibility of the ladder coming into contact with an electrical conductor.

Roof working must be properly supervised.

2.12 **SAFETY CLOTHES AND EQUIPMENT:**

This will be supplied by Contractors and sub-Contractors who are working on sites and must be adequate for the wellbeing of their staff engaged in the type of work contracted for.

The equipment and its use must comply with the regulations and codes of practice as laid down that apply to the conditions of work being undertaken.

Contractors and sub-Contractors will be responsible for the use of any tools and equipment that is supplied by them, or their staff to the exclusion of all responsibility of the **IISER**. Tools will be maintained to the highest standard of safety. Whilst in the possession of such tools, the person so using said tools is responsible for the continued maintenance of safety standards.

It is the individual's responsibility to ensure that the tools he works with are suitable for the job and in a safe condition prior to work commencement. All necessary tools and equipment to complete a contract should be supplied by the Contractor. Due provision must be made during contract preparation.

2.13 **PLANT SERVICES:**

Before using plant services such as electricity, permission to do so must be obtained from the appropriate authority, **IISER** Project Engineer or Safety Officer.

2.14 **SUPERVISION:**

Contractors working at the Project site must ensure that their staffs are adequately supervised.

2.15 **WARNING SIGNS AND NOTICES:**

Suitable warning signs are to be displayed warning of potential hazards.

1.16 The ACMV Contractor shall at his own expense arrange for complying with all the occupational safety, health and welfare legislations of Government including the Electrical code and the Occupational Safety, Health and Welfare Act.

*****

SECTION – 3

TOOLS

3.1 ELECTRICALLY DRIVEN PORTABLE TOOLS:

Permission is to be obtained from the nominated person before any Contractor or sub-Contractor's electrical hand tools can be connected to the electricity supply.

Connection must be by 3-core and 3-pin plugs and sockets, except when tools are double insulated on a 2-wire supply. Where the supply is 3-phase, 4-core cable and 4-pin plugs and sockets with earth connections must be used.

Make-shift connections are prohibited.

The use of extension cables is discouraged, but sometimes necessary.

Portable electric lamps must be the 'Gripper' type with caged wire protection for the bulk and precautions as laid down under relevant section of the relevant Act of Government must be observed.

In all cases, with the exception of double insulated tools, the metal work of the tools must be effectively earthed; also any flexible metallic cable coverings must be earthed.

3.2 COMPRESSED AIR TOOLS

Contractors and sub-Contractors must obtain permission to use any compressed air supply at the Project site.

Contractors and sub-Contractors must also provide suitable noise suppression for pneumatic hammers, drills etc.

3.3 PERCUSSION CARTRIDGE TOOLS

Permission to use percussion tools must be obtained from the designated safety representative prior to the use of these tools.

Also when using percussion tools, it is the individual’s duty to ensure that the charges used in said tools are correct. These tools are to be handled as dangerous weapons, never leave tools unattended, never leave tools charged or store charged, never point tools at personnel, always lock up when finished both tool and charges.

3.4 HOISTING AND LIFTING:

Permission must be obtained prior to the use of Plant and equipment, from the **IISER** Project Engineer or other nominated responsible person.

Equipment must be adequate for the purpose required and anchorage approved by the site safety officer.

All equipment so used must have been examined by a competent person, and where necessary a certificate obtained in accordance with relevant sections of the relevant Act of Government.

No object is to be left unattended whilst using lifting equipment.

3.5 MOVEMENT OF PLANT AND MACHINERY

Permission must be obtained prior to the movement of construction materials, plant or equipment in and around Project site.

3.6 POWERED INDUSTRIAL TRUCKS

Permission must be obtained prior to the use of lift-trucks by Contractors or sub-Contractors at the Project site.

Trucks must only be driven by competent licensed personnel, and must comply with statutory regulations.

*****

SECTION – 4

CONTRACTORS AND SUB-CONTRACTORS GUIDELINES

1. Safe working practices must be observed at all times.

2. It is the responsibility of the Contractors and sub-Contractors staff to use appropriate personal protection. It is the Contractors and sub-Contractors obligation to supply necessary protective equipment and clothing.

3. Certain areas are designated hazardous (eg. noisy areas) and warning signs must be obeyed.

4. Where the Contractors and sub-Contractors work presents a potential hazard, appropriate notices must be supplied and displayed, and the area made secure as far as is reasonably possible.

5. The **IISER** will not provide tools, materials, lifting or access equipment, fixings or raw materials, unless by previous arrangement.

6. Any equipment brought to site by Contractors and sub-Contractors must not be used by untrained persons, and attention is drawn to the indemnity clause of the **IISER** orders, which states that the Contractor is liable for any consequent damage or loss to people, equipment or buildings.

7. All welding, burning and grinding operations which could potentially cause fire must be reported to security.

8. No alcohol is permitted at site, and anyone deemed to be under the influence of alcohol will be required to leave the site.

9. Vehicle parking will be in designated areas only.

10. No smoking is allowed in work areas.

11. No food is to be consumed or left in work areas.

12. Warning signs and speed restrictions must be observed.

13. Place of work to be left in a tidy and safe condition at the end of each work period.

14. Care to be taken against contamination of any product of paint, oil, etc.

15. All injuries must be reported to the authorities as per law applicable.

16. A health and safety officer shall be employed on such conditions as circumstances require.

The above has been received and read by Contractor / Sub- Contractor, we agree to comply with these Rules (See foot-note)

Contractors……..……..

Company……..……

Date……..……

NOTE:
The Contractor will ensure that sub-Contractor receive and sign a copy of these Rules.

MODEL RULES FOR THE PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS EMPLOYED BY CONTRACTORS

FIRST-AID-FACILITIES

At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 labourers or part thereof ordinary employed.

The first-aid box shall be distinctly marked with a red cross on white back ground and shall contain the following equipment, :-

1.02.01 For work places in which the number of labour employed does not exceed 50, each first-aid box shall contain the following equipment:-

- 6 small sterilized dressings
- 3 medium size sterilized dressings
- 3 large size sterilised dressings
- 3 large size sterilised burn dressings
- 1 (30 ml.) bottle containing a two per cent alcoholic solution of iodine.
- 1 (30 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
- 1 snakebite lancet
- 1 (30 gms.) bottle of potassium permanganate crystals
- 1 pair scissors
- 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
- 1 bottle containing 100 tablets (each of 5 gms. of aspirin.
- Ointment for burns
- A bottle of suitable surgical antiseptic solution

1.02.02 For work places in which the number of labour exceed 50.
Each first-aid box shall contain the following equipment.

- 12 small sterilised dressings
- 6 medium size sterlised dressings
- 6 large size sterilised dressings
- 6 large size sterilised burn dressings
- 6 (15 gms.) packets sterilised cotton wool
- 1 (60 ml.) bottle containing a two per cent alcoholic solution of iodine.
- 1 (60 ml.) bottle containing salvolatile having the dose and mode of administration indicated on the label.
- 1 roll of adhesive plaster
- 1 snakebite lancet

- 1 (30 gms.) bottle of potassium permanganate crystals
- 1 pair scissors
- 1 copy of the first-aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes / Government of India.
- A bottle containing 100 tablets (each of 5 gms.) of aspirin. Ointment for burns
- A bottle of suitable surgical antiseptic solution

Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

Nothing except the prescribed contents shall be kept in the First-aid box.

The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.

A person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.

In work places where the number of contract labour employed is 750 or more and hospital facilities are not available within easy distance from the works. First-aid posts shall be established and run by a trained Compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to carry injured person or person suddenly taken ill to the nearest hospital.

2.00 DRINKING WATER

Water quality shall conform to Indian standards. Drinking: IS 10500-1991, Irrigation: IS 11624-1986

2.01 In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of water fit for drinking.

2.02 Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

2.03 Every water supply or storage shall be at a distance of not less than 50 feet from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn form it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and waterproof.

2.04 A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

3.0 WASHING FACILITIES

3.01 In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of labour employed and supervisory staff separately therein.

3.02 Separate and adequate cleaning facilities shall be provided for the use of male and female labourers and supervisory staff.

3.03 Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

4.0 LATRINE AND URINALS

This facility shall Compliance with NBC norms based on population of workers at site on construction safety for ensuring safety during

4.01.01 Latrines shall be provided in every work place on the following scale namely:-

4.01.02 Where females are employed there shall be at least one latrine for every 25females.

4.01.03 Where males are employed, there shall be atleast one latrine for every 25 males.

Provided that where the number of males or females exceeds 100, it shall be sufficient if there is one latrine for 25 males or females as the case may be upto the first 100, and one for every 50 thereafter.

4.02 Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

4.03 Construction of latrines: the inside walls shall be constructed of masonry or some suitable heat-resisting nonabsorbent materials and shall be cement washed inside and outside. Standard sanitary fixtures & fittings shall be provided.

4.04 Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women only" as the case may be.

4.04.01 The notice shall also bear the figure of a man or of a woman, as the case may be.

4.05 There shall be atleast one urinal for male workers up to 50 and one for female workers upto fifty employed at a time, provided where the number of male or female workmen, as the case may be exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereafter.

4.06.a The latrine and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.

b Latrine and urinals other than those connected with a flush sewage system shall comply with the requirements of the Public Health Authorities.

4.07 Water shall be provided by means of tap or otherwise so as to be conveniently accessible in or near the latrine and urinals.

4.08 Disposal of excreta shall be arranged either by connection to a municipal sewer with permission from the local sanitary authority, or by providing connection to a covered soak pit.

4.09 The contractor shall at his own expense, carry out all instructions issued to him by the **IISER** to effect proper disposal of night soil and other conservancy work in respect of the contractor's workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Statutory Authority for execution of such on his behalf.

PROVISION OF SHELTER DURING REST

At every place there shall be provided, free of cost, four suitable sheds, two for males and the other two for rest separately for the use of men and women labour. The height of each shelter shall not be less than 3 metres from the floor level to the lowest part of the roof. These shall be kept clean and the space provided shall be on the basis of 0.6 sq.m per head.

Provided that the **IISER**/ Architects may permit subject to his satisfaction, a portion of the building under construction or other alternative accommodation to be used for the purpose.

CRECHES

At every work place, at which 20 or more women worker are ordinarily employed; there shall be provided two rooms of reasonable dimensions for the use of their children under at the age of six years. One room shall be used as a play room for the children and the other as their bedroom. The rooms shall be constructed with painted masonry walls with light weight roofing.

The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

The contractor shall supply adequate number of toys and games in the play room.

The contractor shall provide one ayah to look after the children in the crèche when the number of women workers does not exceed 50 and two when the number of women workers exceeds 50.

The use of the rooms earmarked as crèches shall be restricted to children, their attendants and mothers of the children.

CANTEENS

In every work place where the work regarding the employment of labour is likely to continue for six months and where in contract labour numbering one hundred or more is ordinarily employed, an adequate canteen shall be provided by the contractor for the use of such labour.

The canteen shall be maintained by the contractor in an efficient manner.

The canteen shall consist of at least a dining hall, kitchen, and pantry and washing places separately for workers and utensils.

The canteen shall be sufficiently lighted at all times when any person has access to it.

The floor shall be made of smooth and impervious materials and inside walls shall be lime-washed or colour washed.

The premises of the canteen shall be maintained in a clean and sanitary condition.

Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

Suitable arrangements shall be made for the collection and disposal of garbage.

The floor area of the dining hall shall be suitably provided with furniture.

Sufficient tables, stools, chair or benches shall be available for the number of diners to be accommodated.

There shall be provided and maintained sufficient utensils crockery, furniture and any other equipment's necessary for the efficient running of the canteen.

The furniture utensils and other equipment shall be maintained in a clean and hygienic condition.

Suitable clean clothes for the employees serving in the canteen shall be provided and maintained.

A service counter, if provided, shall have top of smooth and impervious material.

Suitable facilities including an adequate supply of hot water shall be provided for the cleaning of utensils and equipment.

The food stuffs and other items to be served in the canteen shall be in conformity with the normal habits of the contract labour.

The charges for food stuffs, beverages and any other items served in the canteen shall be based on 'No Profit, No Loss' and shall be conspicuously displayed in the canteen.

In arriving at the price of foodstuffs, and other article served in the canteen, the following items shall not be taken into consideration as expenditure namely:-

The depreciation and maintenance charges for the building and equipment provided for the canteen.

The cost of purchase, repairs and replacement of equipment including furniture, crockery, cutlery and utensils.

The water charges and other charges incurred for lighting and ventilation.

The interest and amounts spent on the provision and maintenance of equipment provided for the canteen.

8.0 Minimum Safety Requirements (To be made a part of Tender conditions and BOQ of works related package to address the inclusion of PPE, Scaffold, Electrical safety measures, House keeping as a minimum)

Prior to commencing work on Site, the Contractor must make himself aware of all the requirements for the Works and the Site relating to Environment, Health & Safety (EH&S) matters including all relevant legislation and standard codes of practice.

Contractor shall comply with all the EH&S Requirements listed below which shall be deemed a fundamental condition of this Contract.

Contractor must comply in full with all applicable Health & Safety (H&S) local and national legislation. (e.g. Labour Licence, Insurance Policy under Workmen Compensation Act, etc.)

In circumstances where there is a conflict between local or national legislation and these Minimum Safety Requirements (MSR), the higher (more protective) requirement shall prevail.

Guardrails are to be provided at all working places and other locations where persons or materials could fall more than 2.0m / 6'6". Where this can physically not be achieved, suitable and sufficient fall protection devices that do not rely on individuals should be provided and used to establish a safe place of work. (Examples include Safety Nets closely installed under height works, Stretched wire ropes installed to hook up safety harnesses while workers move from one location to another at height, Use of full body safety harnesses with double lanyards etc.)

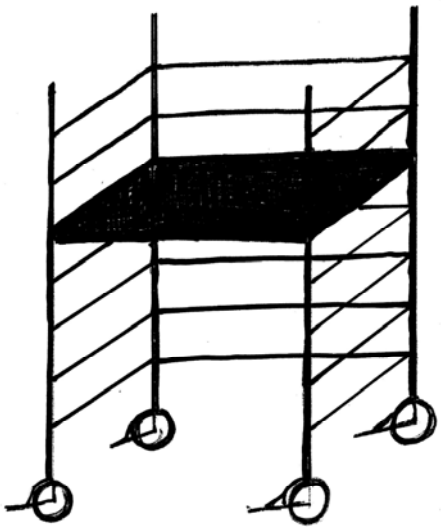
Full body harness with double lanyard

Proper Access to workplatform

All persons working on suspended scaffolds/cradles/gondolas must wear and use appropriate fall prevention equipment so as to protect them effectively at all times when they are at risk from any failure of any part of the scaffold/cradle/gondola, including its suspension system.

Free-standing scaffold towers used externally must not be higher to the top platform level than three times the minimum base dimension, unless secured to a permanent structure. For internal use only, the height to platform may rise to 3.5 times the minimum base dimension. Wheels must be locked when towers are

in use. No person is permitted to remain on a tower platform while a tower is being moved.



Mobile Scaffolds

Holes, shafts and edges from or through which persons could fall a distance of more than 2 metre /6ft 6in must be clearly marked with signage or other means **and** be adequately protected by covers or barriers so as to prevent falls of persons and materials.

Holes, Shafts, Floor Penetrations

All temporary electrical circuits must include a Residual Current Device, Earth Leakage Circuit Breaker or Ground Fault Circuit Interrupter at source.

Temporary Electrical System

Powered Lifts and hoists, aerial platforms and scissors lifts must have a competent driver, certified by a qualified third party. Additionally, the above items must be certified as safe to use by a local government approved third party.

Adequate lighting must be provided to enable safe access to and egress from every place on a site where persons are liable to work, this is in addition to task lighting.

Induction/Orientation

All workers shall receive site-specific safety induction/orientation, before they are involved in any activity at site. They must be made aware of site safety rules, provisions of first aid and welfare facilities such as drinking water, washing place, toilets, rest rooms, etc.

Task related Safety Instruction

Contractor shall ensure all workers shall receive at least one specific task-related training/skilling session per week. This may be achieved by using Toolbox talks &/or induction to Safe Work Method Statement.

Incident/Injury Reporting & Investigation

Contractor shall report and record all incidents, which have potential to cause injuries and damages and also injuries including first aid cases.

Lost Time Injury (LTI) or serious injury must be intimated immediately as soon as possible by phone. (If an injured person doesn't likely to report to work in his next following shift, it is to be recorded as Lost Time Injury)

Job Safety Analysis & Safe Work Method Statement

Contractor must produce detailed Job Safety Analysis / Safe method of work for approval and use only approved work methods only. No work shall start without approved Job Safety Analysis / Safe Work Method Statement. All workers and supervisors must be inducted to Job Safety Analysis / Safe method of work.

(iii) Oxygen / Acetylene / Fuel Gases/ Compressed or Liquefied Gases

(a) All gas cylinders shall be stored, transported and handled as per the requirements of Gas Cylinder Rules, 1981

Indian Standard Safety Codes to be followed by the CONTRACTOR during execution of work

S.No	IS No	Part No./Year	Description
1.	IS 3696	1 - 1987	Safety code for scaffold and ladders
2.	IS 3996	2 - 1991	Safety code for ladders
3.	IS 4014	2 - 1967	Code of practice for steel tubular scaffolding
4.	IS 4081	1986	Safety code for blasting and related drilling operations
5.	IS 4082	1977	Recommendation on stacking and storage materials at site (1st Revision)
6.	IS 4130	1991	Safety code for demolition of buildings 2nd revision
7.	IS 4138	1977	Safety code for working in compressed air
8.	IS 4756	1978	Safety code for funneling work
9.	IS 4912	1978	Safety requirements for floor and wall openings, railing and toe boards
10.	IS 5121	1990	Safety code for piling and other deep foundations
11.	IS 5916	1990	Safety code for constructions involving use of hot bituminous material
12.	IS 7272	1974	Recommendation for labour output constants for building work
13.	IS 7293	1987	Safety code for working with construction machinery
14.	IS 7969	1975	Safety code for handling and storage of building materials with amendment No.1
15.	IS 8989	1978	Safety code for erection of concrete framed structures

S. No	IS No	Part No./ Year	Description
16.	IS 10067	1982	Material constants in building works
17.	IS 1029	1990	Safety code for dress divers in civil engineering works
18.	IS 10302	1995	Unified nomenclature of workmen for civil engineering
19.	IS 13415	1992	Protective barriers in and around buildings - code of safety
20.	IS 13416	1 - 1992	Preventive measures against hazards at work places - recommendations falling materials hazards prevention
21.	IS 13416	2 - 1992	Preventive measures against hazards at work places - recommendations fall prevention
22.	IS 13416	3 - 1994	Preventive measures against hazards at work places - recommendations disposal of debris
23.	IS 13416	4 - 1994	Preventive measures against hazards at work places - recommendations timber structures
24.	IS 13416	5 - 1994	Preventive measures against hazards at work places - recommendations fire protection

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH (IISER) PUNE

VOLUME III

Name of work &Location: **Electrification of Campus Street light at IISER Pune**

NIT NUMBER: 73/ IISER/PUNE/2019-2020

Bids to be submitted online on: (URL:https://eprocure.gov.in/eprocure/app)

Scheduled of quantity

Name of work: Electrification of campus street light at IISER Pune.

Sr.No.	Description of Item	QTY	Unit	Rate in word & figures	Amount in words & figures
1	Supplying & erecting LED 40 W street light fitting with specificatios : Temperature 3000 to 4500 K, IP65/66 Protection, -20 to +40 degree celcius operating temeperature, Pressure die cast aluminium material, CRI>80, Operating voltage 100 to 270 V AC, Lumens > 3000, minimum 1 year warranty, MS powder coated mounting bracket which is suitable for mounting new fitting on existing bracket. Heat resistance, EPR gasket bonded to housing shell render the luminaries dust proof & jet proof to IP 65/IP 66. Make Syska / Jaquar / Philips / Wipro / Bajaj / Crompton. Warranty minimum 12 months from date of commissioning.	150	Nos		
2	Supplying & erecting PVC flexiblae cable, 3 core 2.5 sqmm copper conductor, ISI mark, Polycab/Finolex/Asian/Glowstar/RR make, on wall / trussed/ pole or laid in provided trench, pipe etc in approved manner.The rate is inclusive of the cost of material, labour, hoisting, all taxes & levies, octroi etc complete as per direction of Engineer in charge.	1200	meter		
3	Supply and fixing of outdoor type PVC pole mounted box having 4 pole 16 A connector strip for termination of 2 nos 4 sqmm cable, bottom cable entry with gland termination, DIN rail for SP MCB, mounting clamps for pole, earthing termination, MV danger plate on its door, Hinged door with panel lock, dust and water free design, gray or white color. Transport, handling, labour etc. are included, as complete.	150	Nos		

4	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of Single poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Make L&T/ Legrand/Schneider/Siemens	150	Nos		
5	Supply and laying of HDPE PLB 40 mm OD pipe , suitable for LT cable with required duct coupler	3300	meter		
6	Supplying & erecting PVC armored cable, 4 core 6 sqmm Al conductor, ISI mark, Polycab/Finolex/Asian/Glowstar make, with continuous 2 Runs of 12 SWG GI earth wire erected on wall / trussed/ pole or laid in provided trench, pipe etc in approved manner.The rate is inclusive of the cost of material, labour, hoisting, all taxes & levies, octroi etc complete as per direction of Engineer in charge.	3300	meter		
7	Supplying and making end termination with brass compression gland and AL lugs for 4 core 6 sqmm size of PVC insulated and PVC sheathed / XLPE copper conductor cable of 1.1 KV grade as required.	350	Nos		
8	Supplying & erecting PVC armoured cable, 4 core 16 sqmm AL conductor, ISI mark, Polycab/Finolex/Asian/Glowstar make, with continuous 8 SWG GI earth wire erected on wall / trussed/ pole or laid in provided trench, pipe etc in approved manner.	350	meter		
9	Supplying and making end termination with brass compression gland and AL lugs for 4 core 16 sqmm size of PVC insulated and PVC sheathed / XLPE copper/aluminium conductor cable of 1.1 KV grade as per direction of Engineer in charge.	14	Nos		

10	Supply, installation, testing and commissioning of **outdoor type** street light control box made out of 14 SWG CRCA sheet, powder coated of appropriate size to accommodate following electrical accessories. Make L&T/ Legrand/Schneider/Siemens.The rate is inclusive of the cost of material, labour, hoisting, all taxes & levies, octroi etc complete as per direction of Engineer in charge. Item includes a) FP MCB - 32 Amp - 1 Nos. b) TPN MCB 25 Amp - 2 Nos c) Contactor 40 A - 2 Nos d) Metering - Digital combination meter for VM, AM,KWH e) Protection relays - Earth fault for each outgoing. f) Wiring with 4 x 4 sqmm FRLS copper wire in PVC raceway. g) Astronomical time switch of 230 V AC, 1 NO+ 1 NC configuration to be mounted in existing feeder pillars / Lighting DBs/ Panel for automatic switching On & OFF of street lights at sun set & sun rise or twilight (Auto ON, Auto OFF, Auto modes) with manual override facility with 12/24 hour display format with suitable battery and indication for relay status i/c programming at site complete as required. - Qty 2 nos h) MS stand for outdoor type control box : height above 800 mm , min 50 x 50 x 5 mm MS channels for construction; more than 600 mm in ground for firm standing , painted and earthed. i) Street light control panel should have opening door, locking system, louvers for ventilation, bottom cable entry, stand, outdoor type , inside metering arrangement.	6	Nos		
11	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.	150	Nos		
12	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	120	meter		

13	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	10	Nos		
14	Making the trench in soft / hard soil of suitable width & 0.75 to 1 meter depth for laying LT cable, with a layer of 6 cm thick layer of coarse sand at bottom & the cable covered & refilling the trench with soil & making a crown of 12 cm . height on the top of the trench.The rate is inclusive of the cost of material, labour, all taxes & levies, octroi etc complete as per direction of Engineer in charge. Finished trench shall be measured in metre.	3300	meter		
15	Removing of exisiting solar light fitting (36 to 72 W) with wiring , controller and connector etc , from existing pole of upto 9 meter height (excluding solar PV panel). Removing, shifting, handling, storage in campus store, inventory, labour, transport, tools, ladders is in scope of agency	150	Nos		
16	Removing of armored cable upto 35 sqmm from ground excluding excavation work. Removing, shifting, handling, storage in campus store, inventory, labour, transport, tools, ladders is in scope of agency	1500	meter		
	TOTAL				