



भारतीय प्रबंध संस्थान इंदौर

INDIAN INSTITUTE OF MANAGEMENT INDORE

Prabandh Shikhar, Rau-Pithampur Road, Indore - 453556 (M.P.),
India

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E-Tender Notice No.

IIMI/Project/12/2017/45 File No.367

TECHNO COMMERCIAL PROPOSAL

Name of Work:

“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”

Certified that the NIT Document contains 151 pages serially numbered from 1 to 151

INDIAN INSTITUTE OF MANAGEMENT INDORE

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भारतीय प्रबंध संस्थान इन्दौर

प्रबंध शिखर, राऊ-पीथमपुर रोड, इन्दौर - 453 556 (म.प्र.), भारत

INDIAN INSTITUTE OF MANAGEMENT INDORE

Prabandh Shikhar, Rau-Pithampur Road, Indore - 453 556 (M.P.), India

Dated: August 28, 2017

NOTICE INVITING E-TENDER

Ref: E-Tender Notice No. IIMI/Project/12/2017/45 File No.367

IIM Indore invites online item rate tender through e-procurement portal for the under mentioned work at IIM Indore from the bidders eligible as per the eligibility criteria mentioned in the tender document. The details are given below:

A. Schedule of Important Events / Activities

A.1 Information Related to Bid

A.1.1	NIT No. :IIMI/Project/12/2017/45 File No.367	
A.1.2	Name of Work	“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”
A.1.3	Estimated Cost Put to Tender	Part-I: Civil & Joinery Rs. 1,03,79,515/- Part-II: Electrical & allied works Rs. 80,98,148/- Total Rs. 1,84,77,663/-
A.1.4	Earnest Money Deposit (Rs.)	Rs. 3,70,000/- (Rs. Three Lakhs Seventy Thousand Only) by e-payment through electronic mode
A.1.5	Tender Processing Fee (Rs.)	Rs. 1000/- by e-payment through electronic mode (Non-Refundable)
A.1.6	Completion period	FOUR (04) Calendar Months including monsoon period
A.1.7	Mode of submission of tender	On-Line mode only

A.2 Key Events and Dates

A.2.1	Publishing Date	03.00 PM on August 28, 2017
A.2.2	Document Download Start Date	From 3.00 PM on August 28, 2017
A.2.3	Raising queries / clarification Start Date	From 3.00 PM on August 28, 2017
A.2.4	Raising queries/clarification End Date (on email: projectdept@iimidr.ac.in)	Upto 4.30 PM on September 5, 2017
A.2.5	Pre-Bid Meeting	04:00 PM on September 6, 2017 at Conference Hall, Administration Block, IIM Indore. Those who are interested can attend.
A.2.6	Uploading of clarifications on queries (If any)	By September 8, 2017
A.2.7	Last date and time of closing of uploading/online submission of tender including scanned copy of EMD and tender Processing Fee details/receipts and other documents as specified	<u>Upto 04:00 PM on September 13, 2017</u>
A.2.8	Date & Time of online opening of technical bid	04:30 PM on September 14, 2017
A.2.9	Date and Time of opening of financial bid of qualified bidders	Will be notified at a later date

A.3 Other Important Information Related to Bid

A.3.1	Security Deposit	2.5% of tendered value to be recovered from running bills
A.3.2	Performance Guarantee	5 (FIVE) % of tendered value on acceptance of bid
A.3.3	Mode of payment of Tender Processing Fee and EMD	<p>Bidders will have to deposit the Tender Processing Fee and EMD through NEFT or RTGS. Details for the same are as below:</p> <p>Name of beneficiary :Indian Institute of Management Indore Address :Rau-Pithampur Road,Indore-453556,M.P. Account No. :53018623445</p> <p>Name of the Bank :State Bank of India Address of the bank :IIM Indore Campus IFSC Code :SBIN0030525</p> <p>Bidders will have to upload scanned copy of Payment details towards cost of tender processing fee & EMD during the submission of tender and the same will be accepted only on verification & confirmation by the Institute. Any delay in credit will not be entertained by the Institute.</p>
A.3.4	Bid Validity	90 Days from the date of opening of Technical Bid

B. Guidelines for e-Tendering

- B.1** It is mandatory for all the applicants to have class II or III digital signature certification from licensed certifying agency like NIC, MTNL, e-mudra, TCS, safescrypt, GNFC etc.
- B.2** Detailed NIT can be viewed free of cost on IIM Indore website under the URL <http://www.iimdr.ac.in/tenders/> . Schedule of quantities (Financial bid form) can be downloaded only from <https://eprocure.gov.in/eprocure/app>. Uploading of tender will be possible only after making payment of Tender Processing Fee and EMD.
- B.3** The tender shall be submitted online in the prescribed format before the date and time as mentioned in NIT. No other mode of submission is acceptable.
- B.4** The applicant have to upload the details of e-payment of processing fee & EMD before the last date & time and download the tender documents form the e-tendering portal <https://eprocure.gov.in/eprocure/app>.
- B.5** Tenderer are advised to upload their documents well in time to avoid last minute rush on the server or complication in uploading. IIM Indore will not be responsible for any type of problem in uploading the documents. No hard copies for tender submission shall be entertained.
- B.6** Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited e-Tender Processing Fee and Earnest Money Deposit and other documents scanned and uploaded are found in order.
- B.7** Information and Instructions for bidders posted on website shall form part of bid document.
- B.8** The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed 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 <https://eprocure.gov.in/eprocure/app> free of cost.
- B.9** Those contractors / vendors not registered on the website mentioned above, are required to get registered beforehand. If needed the intending bidders may get acquainted with the process online from the www.eprocure.gov.in site itself.
- B.10** On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
- B.11** Contractor can upload documents in the form of JPG format and PDF format.

- B.12** The price bid format is provided in a spread sheet file like BoQ_price bid.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Price Bid/BOQ template must not be modified/replaced by the bidder; else the bid submitted is liable to be rejected for this tender.
- B.13** Contractor must ensure to quote rate of each item. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as “0” (ZERO).
- B.14** The technical bid will be opened online first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.
- B.15** Completed Tenders containing technical bid and price bid will be received ONLINE only on CPP Portal website <https://eprocure.gov.in/eprocure/app> at the fixed time and date indicted in the NIT. The Tenderer will be at liberty to be present either in person or through an authorized representative at the time of opening of the Technical Bid with the Bid Acknowledgement Receipt or they can view the bid opening event online at their remote end.
- B.16** If there are any clarifications, this may be obtained online through the tender site, or thro’ the contact details. Bidder should take into account the corrigendum published before submitting the bids online.
- B.17** It is construed that the bidder has read all the terms and conditions before submitting their offer. Bidder should go through the tender schedules carefully and upload the documents as asked; otherwise, the bid will be rejected.
- B.18** The bidder has to digitally sign and upload the required bid documents one by one as indicated. Bidders to note that the very act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read all sections and pages of the bid document including General conditions of contract without any exception and have understood the entire document and are clear about the requirements of the tender requirements.
- B.19** The bidders are requested to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour. Tenderers are advised to upload their documents well in time to avoid last minute rush on the server.
- B.20** The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.

C. Other information and terms & conditions

- C.1 The bid submitted shall become invalid and e-tender processing fee shall not be refunded if:
- If the bidder is found ineligible.
 - If the documents submitted by the successful bidder does not match with the originals before the award of work.
- C.2 However, certified copy of all the scanned and uploaded documents as specified in NIT shall have to be submitted by the lowest bidder only within a week physically in the office of the “ Chief Engineer, Indian Institute of Management Indore, Prabandh Shikhar, Rau - Pithampur Road, Indore 453556 (M.P.).
- C.3 Certificate of financial turn over: At the time of submission of bid, contractor may upload Undertaking / certificate from CA mentioning Financial Turnover of last 3 Year or for the period as specified in the bid document.
- C.4 IF ANY INFORMATION FURNISHED by the applicant is found to be incorrect at a later stage, they shall be liable to be debarred from tendering/ taking up works in IIM INDORE.
- C.5 Short listing of the agencies shall be subject to through verification of their credentials and inspection of works carried out by them, through a Technical Evaluation committee of experts, constituted by IIM Indore.
- C.6 The competent authority on behalf of the Director IIM Indore does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
- C.7 Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
- C.8 The competent authority on behalf of the Director, IIM Indore reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
- C.9 *The bid for the works shall remain open for acceptance for a period of ninety (90) days from the date of opening of financial bid.* If any bidders withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the IIM Indore shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% of the said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the rebidding process of the work.

C.10 This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

- The Notice Inviting Bid, all the documents including additional conditions, specifications, General Conditions of Contract and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
- Any other Standard C.P.W.D. Form / other forms as applicable/mentioned.

C.11 Mode of payment of Tender Processing Fee and EMD: Bidders may deposit the Tender Processing Fee and EMD through NEFT or RTGS. Details for the same are as below:

Name of beneficiary	: Indian Institute of Management Indore
Address	: Rau-Pithampur Road, Indore -453556, M.P.
Account No.	: 53018623445
Name of the Bank	: State Bank of India
Address of the bank	: IIM Indore Campus
IFSC Code	: SBIN0030525

Bidders will have to upload scanned copy of Payment details towards cost of tender processing fee & EMD during the submission of tender and the same will be accepted only on verification & confirmation by the Institute. Any delay in credit will not be entertained by the Institute.

C.12 TAXES: -

- i) This works comes under Works contract. The taxes as applicable shall be deducted from each bill paid to the contractor.
- ii) The contractor should get registered under GST (Goods & Service Tax) or any other tax as applicable as per the extent order on the subject work and same shall be paid by the contractor to concerned department and the same should be considered in his quoted rates.
- iii) Labour Welfare cess @ 1 % of gross value of work done shall be recovered from each bill paid to the contractor.
- iv) Income Tax and cess as applicable shall be deducted from each bill paid to the contractor.
- v) Contractor should be registered under EPF & ESIC and as per law, shall pay EPF & ESIC of contract workers to concerned Department from time to time.
- vi) Any other taxes/cess as per Government directives shall be deducted from each bill paid to the contractor from time to time or as per rule in case of manufacturer.

- C.13** For any queries regarding e-tendering process, the bidders are requested to contact as provided in the tender document. Parallely for any further queries, the bidders are asked to contact over phone: 0120-4200462, 0120-4001002, 91 8826246593 or 0731-2439620/ 07312439447 or send a mail over to cphp-nic@nic.in
- C.14** The specifications, Terms & Conditions, other regulations which are not herein mentioned will be guided by relevant CPWD guidelines, manual, specifications / BIS / IS/ Other Central / State Govt. norms applicable for IIM Indore & as prescribed by the OEM and the decision in this regard will be guided by the decision of the respective authority of IIM Indore which shall be final and binding to the contractor.
- C.15** For any queries regarding e-tendering process, the bidders are requested to contact as provided in the tender document. Parallely for any further queries, the bidders are advised to contact over phone: 0120-4200462, 0120-4001002, 91 8826246593, 0731-2439620 or send a mail over to cphp-nic@nic.in
- C.16** Tender documents may be downloaded from Central Public Procurement Portal <https://eprocure.gov.in/eprocure/app>. Aspiring Bidders/ Suppliers who have not enrolled / registered in e-procurement should enroll /register before participating through the website <https://eprocure.gov.in/eprocure/app>. The portal enrolment is free of cost.
- C.17** Tenderers can access tender documents on the website, fill them with all relevant information and submit the completed tender document into electronic tender on the website <https://eprocure.gov.in/eprocure/app>.
- C.18** Tenders and supporting documents should be uploaded through e-procurement. Hard copy of the tender documents will not be accepted.
- C.19** In the event of acceptance of a tender, the documents submitted by the successful bidder shall be verified with the originals before the award of work.
- C.20** On acceptance of the tender, the tenderer has to furnish a bar chart showing work completion schedule and submit it along with the performance security guarantee.
- C.21** The tenderer should not have been blacklisted or debarred by any Central/ State / Public Agency from carrying out similar business during last three financial years

D. Bidder Qualification Criteria

Contractors who fulfil the following requirements shall ONLY be qualified for financial bid opening (Joint Ventures are not accepted):

1. **Work Experience:** The bidders having experience of successfully completed works during the last 7 years ending last day of the month previous to the one in which applications are invited. *The works completed upto previous day of last date of submission of tenders shall also be considered.*

1.1 Part-I : Civil & Joinery

Three similar works, each of value not less than Rs. 41,51,806/-,

OR

Two similar works, each of value not less than Rs. 62,27,709/-,

OR

One similar work of value not less than Rs. 83,03,612/-, all amounts rounded off to a convenient full figure.

Note: Similar work shall mean Civil & Interior Furnishing Works, Partitions, Furniture's etc

And

- 1.2 Part-II : Electrical & Allied Works:** The Bidder must have completed successfully at least one project of electrical/Audio Visual/Fire alarm system or similar nature of works costing minimum 40 Lakhs.

Important Note:

- a. The completion certificate issued from clients should indicate the date of commencement, period of completion- stipulated & actual, awarded cost & cost at completion, quality of work done etc.
 - b. Those who have failed to complete the job within the stipulated time or proportionately extended time corresponding to the excess cost shall be ineligible to participate in the tender.
2. **Annual Financial Turnover:** Should have had average annual financial turnover at least 100% of the estimated cost put to tender during the last three years from the overall business ending March 31, 2016. (Scanned copy of audited balance sheets/ certificate from chartered accountant to be uploaded)
 3. **Technical Staff:** List of technical staff they possess and proposed to deploy for the work to be uploaded.

4. **Plant & Machinery:** List of plant, machinery, equipments, accessories & infrastructure facilities possessed by the agency to be uploaded
5. **Certificates:** (scanned copy of original certificates to be uploaded)
 - 5.1 Certification of Incorporation/ Registration of firm
 - 5.2 Latest IT returns for the FY 13-14, 14-15 & 15-16
 - 5.3 PAN (Permanent Account Number)
 - 5.4 GST (Goods & Service Tax) Registration Certificate
 - 5.5 E-payment details towards cost of tender processing fee & EMD

The bids received under shall be assessed and evaluated based on the qualification criteria and evaluation procedure prescribed below under the “Evaluation Procedure: Scoring System”. To qualify, the Contractor shall score minimum 60 marks in total.

Evaluation Procedure: Scoring System

Weightage and Scores

The criteria for evaluation of the performance of contractors for pre-eligibility shall be assessed by assignee scores over as follows:

	Attributes	Evaluation
(a)	Financial strength (20 marks)	
	Average annual Turn over	i) 60% marks for minimum eligibility criteria ii) 100% marks for twice the minimum eligibility criteria or more In between (i) & (ii) - on pro-rata basis
(b)	Work Experience (20 marks)	
	Experience in similar class of works	i) 60% marks for minimum eligibility criteria ii) 100% marks for twice the minimum eligibility criteria or more In between (i) & (ii) - on pro-rata basis
(C)	Performance on works (time over run) (20 marks)	
	Parameter Calculation For points	Score (Maximum Marks 20)

	If TOR =	1.00	2.00	3.00	>3.50
	(i) Without levy of compensation	20	15	10	10
	(ii) With levy of compensation	20	5	0	-5
	(iii) Levy of compensation not decided	20	10	0	0
<p>TOR = AT/ST, where AT=Actual Time; ST=Stipulated Time. Note: Marks for value in between the stages indicated above is to be determined by straight line variation basis.</p>					
(d)	Performance of works (Quality) (15 marks)				
	(i) Very Good	15			
	(ii) Good	10			
	(iii) Fair	5			
	(iv) Poor	0			
(e)	Personnel and Establishment(Max. 15 marks)				
	i) Graduate Engineer	5 marks for each			
	ii) Diploma holder Engineer	3 marks for each upto Max.6 marks			
	iii) supervisory/Foreman	1 mark for each upto Max. 3 marks			
(f)	Plant & Equipment (Max. 10 marks)				
	i) Tile cutter	1.5 marks for each upto Max. 3 marks			
	ii) Breaker	1.5 marks for each upto Max. 3 marks			
	iii) Stone Polishing	1 marks for each upto Max.1 marks			
	iv) Drilling machine	1.5 marks for each upto Max.3 marks			

To qualify, the Contractor shall score minimum 60 marks in total.

Note:-

The Bidder must upload stipulated documentary evidence in support of their claim for fulfilling the criteria while uploading the Bids. The Bids without documentary evidence will be out rightly rejected.

E. List of Documents to be scanned and uploaded

While submitting bid, the Scanned copies of the following original certificates are to be uploaded:

- i) Certificates of Work Experience: Work Orders along with Completion Certificates issued by officer of the Department not below the rank of an Executive Engineer in case of PSUs/Government and any senior officer if the work done in a private enterprises.
- ii) Certificate of work experience in respect of the successfully completed work of electrical/Audio Visual/Fire alarm system or similar nature of works costing minimum 40 Lakhs
- iii) Certification of Registration of firm / company
- iv) Copies of audited balance sheets and P&L statements for the FY 13-14, 14-15 & 15-16
- v) Technical Staff: List of technical staff they possess and proposed to deploy for the work to be uploaded.
- vi) Plant & Machinery: List of plant, machinery, equipments, accessories & infrastructure facilities possessed by the agency to be uploaded
- vii) Latest IT returns for the FY 13-14, 14-15 & 15-16
- viii) PAN (Permanent Account Number)
- ix) GST (Goods & Services Tax) Registration Certificate
- x) EPF/ESI registration certificates
- xi) E-payment details towards cost of tender processing fee & EMD
- xii) Aadhar card copy of the authorized officer of the company/firm who will be signing agreement etc.
- xiii) Undertaking having gone through the documents as per the Annexure-1.
- xiv) Any other document that bidder felt necessary in support of his candidature.
- xv) Schedule of Price Bid in the form of BoQ.xls

F. General Instructions to Tenderers

1. Scope of Work

The scope of work shall include the following.

- a. Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore including all Civil & Joinery and Electrical, Audio Visual, & allied works as detailed in Bill of Quantity and specifications complete as required.
- b. Delivery of entire material to IIM Indore including packing, handling, insurance, transporting, clearing, loading/unloading etc.
- c. Installation, testing & commissioning of all the components/equipments/ accessories etc. as per technical specifications and handing over to the IIM Indore.
- d. Any other work related to but not specifically mentioned above, required for completion of the job as per the intent and scope of work.

2. The Tenderer shall carefully check the specifications and shall satisfy himself that the material / items offered is complying with the IIM Indore's requirements and specifications laid down in the tender document.

3. Inspection of materials/work at site

The IIM Indore's engineer and /or his representative shall inspect the materials at site after delivery before the same is used in the work. The IIM's engineer and /or his representative shall have free and full access at any time during execution of the contract to the contractor's works or site. In case of execution of work for the aforesaid purpose, and IIM's engineer may require the contractor to make arrangements for inspection of work or any part thereof or any material at his premises or at any other place specified by the IIM Indore's Engineer.

4. The IIM Indore's Engineer shall have the power-

- i) To reject any equipment or parts submitted, as not being in accordance with the specification;
- ii) To reject the whole/part of the items & materials tendered for inspection, if after inspection of such portion thereof, as he may in his discretion think fit, he is satisfied that the same is unsatisfactory; and
- iii) To mark the rejected items / materials or parts with a rejection mark so that it may easily be identified if re-submitted.

5. Maintenance & guarantee/warranty of the system:

- a. The rate quoted should be inclusive of charges of all the accessories and fittings including supply, installation & commissioning of the materials at earmarked / specified locations including maintenance during Defect Liability Period of 01 (ONE) year.
- b. During the Defect Liability Period of ONE year, IIM Indore reserve the right to cross check the performance of any item / material with the minimum performance levels specified in the specifications.

- c. Any defect / fault noticed in the installed systems shall be rectified within 7days (Maximum) time to put back the system into operation. Any delay more than 7 days will be viewed seriously and may call for proportionate extension of warranty period and may also be linked with penalty of Rs. 500/- per day of delay or both.
 - d. Defective/ non-functioning part of the system shall be repaired / replaced free of cost by the successful bidder within the Defect Liability Period of ONE Year for proper, sustained & reliable operation of the System.
 - e. The contractor shall be responsible for the satisfactory performance of the installed systems in respect of the electrical, fire, AV etc during ONE years of defect liability period. Any complaint received from IIM INDORE must be attended within seven days from the receipt of complaint in writing or telephonically, failing which IIM INDORE will make the system functional and debit the expenditure to the party which will be deducted from the remaining payment due to the manufacturer and the defaulter contractor will be blacklisted.
6. Any damage of the existing structure, building etc. made by the successful bidder during execution of this work shall be made good as it was at his own cost & risk.

G. Terms of Payment and Mile stone(s)

1. Terms of Payment for the work

The following terms of payment shall be applicable. No variation in the terms of payment will be acceptable. Further, as per Indian laws, income tax, Works Contract Tax/VAT, any other tax as applicable shall be deducted at source from the bills and a certificate for the same will be issued to the contractor.

Release of payment:

Payment shall be made by IIM Indore to the contractor only after achieving payment milestone for which the following are necessary conditions:

Sl. No.	Description of Milestone (Physical)	Time Allowed in months <u>(from date of reckoning start)</u>
1	Dismantling of all the items mentioned in the schedule and get ready the site for construction of cabins	20 Days
2	Completion of minimum 10 faculty cabins in all respect	2.5 Months
3	Project Closure: Completion of entire project including all civil, electrical & allied works and handover of the same to the IIM Indore Authority	04 months

Note: Running account bills on fulfillment of respective payment milestone as above shall be released subject to gross value of work done together with net payment not less than Rs. 50 (FIFTY) Lakhs.

2. Mile stone(s) as per table given below:-

The successful contractor shall prepare an integrated programme chart in MS Project/Primavera software or any other state of art project management tools 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/- shall be made on per day basis in case of delay in submission of the above programme.

The major milestones are define below and should be part of the project plan as:

Sl. No.	Description of Milestone (Physical)	Time Allowed in months <u>(from date of reckoning start)</u>	Amount to be withheld in case of non-achievement of milestone
1	Dismantling of all the items mentioned in the schedule and get ready the site for construction of cabins	20 Days	Rs. 5,00,000/-
2	Completion of minimum 10 faculty cabins in all respect	2.5 Months	RS. 10,00,000/-
3	Project Closure: Completion of entire project including all civil, electrical & allied works and handover of the same to the IIM Indore Authority	04 months	Imposition of Liquidated damages in terms of clause 2 of the agreement

Total time allowed for completion of work: 04 (FOUR) Months.

H Security Deposit and Performance Guarantee

Security deposit:

- a. *The security deposit will be collected by deductions from the running bill of the contractor at the rate mentioned below. The security deposit can also be deposited in cash or in the form of Government Securities, Fixed Deposit Receipts etc.*
- b. A sum @ 2.5% of the gross amount of the bill will be deducted from each running bill *as well as final bill* of the contractor. Such deductions will be made unless the contractor has deposited the amount of security at the rate mentioned in cash or Government securities or Fixed Deposit Receipts.

This is in addition to the performance guarantee that the contractor is required to deposit as per clause mentioned in the tender document.

- c. Security deposit can be released against bank guarantee issued by a schedule bank on its accumulation to a minimum amount of Rs. 5 lakhs subject to the condition that amount of any bank guarantee except last one, shall not be less than Rs. 5 lakhs.
- d. The Bank Guarantee submitted against Security Deposit shall initially be valid up to the stipulated date of completion of the work plus maintenance period as defined under clause 17 of GCC which shall be extended further time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.
- e. The security Deposit shall be refunded to the contractor after the completion of defect liability period of 01 (ONE) year.

Performance Guarantee:

The contractor whose bid is accepted will be required to furnish performance guarantee of 5 % (FIVE Percent) of the bid amount within Ten days of issue of LOI and should be in favour of 'Indian Institute of Management Indore'. This guarantee may be in the form of Banker's cheque of any public sector bank/Demand Draft of any public sector bank/ Fixed Deposit Receipts or Guarantee Bonds of any public sector bank or the State Bank of India in accordance with the prescribed format. In case the contractor fails to deposit the said performance guarantee within the period as indicated above, including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee.

The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that.

**Form of Performance Security (Guarantee)
Bank Guarantee Bond**

In consideration of the Director, IIM Indore (hereinafter called “The IIM Indore”) 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.

1. We, (hereinafter referred to as “the Bank”) hereby undertake to pay to the IIM Indore an amount not exceeding Rs. (Rupees..... Only) on demand by the IIM Indore.

2. We,(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the IIM Indore 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. (Rupeesonly)

3. We, the said bank further undertake to pay the IIM Indore 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 thereunder and the Contractor(s) shall have no claim against us for making such payment.

4. We, (indicate the name of the Bank) further agree that the guarantee herein contained shall 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 IIM Indore 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 IIM Indore 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, (indicate the name of the Bank) further agree with the IIM Indore that the IIM Indore 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 IIM Indore 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 IIM Indore or any indulgence by the IIM Indore 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, (indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the IIM Indore in writing.

8. This guarantee shall be valid up tounless extended on demand by the IIM Indore. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees) 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 theday offor.....(indicate the name of the Bank).

I. Safety Codes

1. First-aid appliances, including adequate supply of sterilized dressings and cotton wool, shall be maintained in a readily accessible place.
2. The injured person shall be taken to a public hospital without loss of time, in cases where the injury necessitates hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all works that cannot safely be done from ground.
4. No portable single ladder shall be over 8 meters in length, the width between the side rails not less than 30 cm (clear) and the distance between two adjacent rungs shall not be more than 30 cm. When a ladder is used, an extra labour shall be engaged for holding the ladder.
5. The excavated material shall not be placed within 1.5 meters of the edge of the trench or half of the depth of the trench, whichever is more. All trenches and excavations shall be provided with necessary protection of minimum height of one meter.
6. Every opening in the floor of a Building or a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be one meter.
7. No floor, roof or other part of the structure shall be so over-loaded with debris or materials as to render it unsafe.
8. Workers employed on mixing and handling material such as asphalt, cement, mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.
9. Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
10. No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
11. Suitable face masks should be supplied for use by the workers when the paint is applied in the form of spray or surface having lead paint dry rubbed and scrapped.
12. Hoisting machines and tackles used in the work, including their attachments, anchorage and supports shall be in perfect condition.
13. The ropes used in hoisting or lowering material or as a means of suspension shall be of durable quality and adequate strength and free from defects.

J. Fire Safety

1. Cutting / drilling machine and other electrically operated equipments used at site shall be plugged into correctly rated electrical outlets.
2. Only ISI marked 3 pin plug and other appliances and equipments shall be used.
3. Electrical power cables/wires used shall not have any joints and shall be properly rated.
4. All electrical appliances i.e. welding, drilling, cutting machine etc. shall be safely and securely earthed to prevent leakage current while in operation.
5. Before commencing the welding work for the first time on any day, fire section shall be informed and only after the site inspection by the Fire officers/Personnel, work shall be started.
6. Two buckets of water and sand shall be kept in an easily accessible area on the site.
7. Fire extinguishers recommended and issued by fire officers shall be kept on the site.
8. Used paint drums shall be stored in specified store only after closing them properly.
9. Personal protective equipments such as safety shoes, hand gloves, welder's mask, ear plug etc. depending upon the requirement of the work shall be provided by the contractor to the workmen to prevent occupational health hazards.
10. The safety belt shall be provided by the contractor and used by the workmen while working from height for more than 10' from Ground level.
11. Passages near lift lobby and staircases shall be used for stacking / dumping any kind of materials/waste.
12. None of the fire extinguishers shall be removed/shifted from its designated location.
13. Power supply shall be switched off from the mains when equipment is not in use.
14. Wood-shavings and saw-dust generated from the work shall be collected on daily basis, removed from site and stored at the designated place in proper manner.
15. Any debris generated from the work shall be collected on daily basis, removed from site and stored at the designated place in proper manner.
16. Battery operated emergency light/torches shall be provided by the contractor to the workmen while working beyond office hours.

K.	Integrity Pact
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INTEGRITY PACT

To,
.....,
.....,
.....

Sub: NIT No. **IIMI/Project/12/2017/45 File No. 367** for the work of **“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”**

Dear Sir,

It is here by declared that IIM Indore 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 of the bidder 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 IIM Indore.

Yours faithfully

Chief Engineer

Letter of Transmittal

To,
The Chief Engineer,
IIM Indore (M.P.)

Sub: NIT No. **IIMI/Project/12/2017/45 File No. 367** for the work of “**Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II**”

Dear Sir,

I/We acknowledge that IIM Indore 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 IIM Indore. 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, IIM Indore shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/ bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

INTEGRITY AGREEMENT

This Integrity Agreement is made at on this day of 2017

BETWEEN

The Director, IIM Indore represented through Chief Engineer, IIM Indore, (Hereinafter referred as the IIM Indore, Prabandh Shikhar, Rau-Pithampur Road, Indore ‘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. IIMI/Project/12/2017/45 File No. 367**) (hereinafter referred to as “Tender/Bid”) and intends to award, under laid down organizational procedure, contract for “**Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II**” 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 endeavour 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 IIM Indore / 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)/ Contractor(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 participate 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.

(d) 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 IIM Indore 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.

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, IIM Indore.

Article 7- Other Provisions

(1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Division 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 intentions.

(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:

L. Agreement

Format for Agreement

THIS AGREEMENT made at Indore on the _____ day of _____ 2017 between Indian Institute of Management Indore Rau- Pithampur Road, Indore (hereinafter called "The IIM INDORE" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) of the one part AND

(herein after called "The Contractor" which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns) of the other part.

WHEREAS

The IIM INDORE is desirous of carrying out the work of **“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”**

The Works are to be executed as per the schedules mentioned in tender document drawings and specifications describing the works to be done.

The Contractor has agreed to execute the said works subject to the provisions hereinafter contained and subject also to General Conditions of Contract, Special conditions of contract, Safety Code, Model Rules for the protection of health and Sanitary arrangements for workers, Specifications, Preambles and Schedule of Quantities and installation schedule (all of which are hereinafter collectively referred to as the ‘said tender conditions’) and strictly in accordance with the Scope of work & technical specifications annexed hereto at or for the respective rates set out in the Schedule of Quantities amounting to the sum as there under arrived at or such other sums as shall become payable there under (hereinafter referred to as the said tendered amount).

NOW IT IS HEREBY AGREED AS FOLLOWS: -

1. In consideration of the said tendered amount to be paid by The IIM INDORE to the Contractor at the time and in the manner set forth in the said tender conditions and in accordance with the Schedule of Payments to execute and complete the work shown upon the said specifications, drawings & other conditions and strictly in accordance with the specifications and Schedule of Quantities.
2. The said tender conditions, scope of work and the annexures hereto shall be read and considered as forming part of this contract and the parties hereto shall respectfully abide by to the said conditions and perform the agreement on their part respectively contained in the said conditions.

3. The approved drawings if any, notice inviting tenders technical specification etc. shall also form the basis of this contract.
4. This contract is neither a Lump sum Contract, nor a piece work contract, but is a contract on item rate basis to be carried out and to be paid for according to the Schedule of Payments at the rates contained in the Schedule of Quantities.
5. The contract herein contained shall comprise not only the works mentioned above but all subsidiary works connected therewith within the same site as may be ordered to be done from time to time by the said Engineer In charge for the time being, even if such work may not be shown on the said Drawings or described in the said Specifications and Schedule of Quantities.
6. The IIM INDORE reserves to themselves the right of altering the drawings, specifications and the nature of the work by adding to or omitting from the scope of work any item of work or portions of the same without prejudice to this contract.
7. Time shall be considered as the essence of this contract and the Contractor hereby agrees to commence the work within 10 days from the date of work order or from the date of handing over of the site, as provided for in the said terms and conditions, whichever is later, and shall complete the entire work within the specified period, subject nevertheless the provisions for extension of time as may be agreed to by the IIM INDORE and as contained in the said conditions.
8. All payments by the IIM INDORE under this contract shall be made only at Indore.
9. All disputes arising out of or in any way connected with this contract shall be deemed to have arisen at Indore and courts in Indore only shall have jurisdiction to determine the same.
10. That the contract and several parts of this contract have been read by the contractor and fully understood by him. The contractor shall not be entitled for payment beyond tendered quantities unless ordered specifically by written instructions of Director IIM INDORE.
11. This contract shall be signed in duplicate, the original whereof shall be kept in the custody of the IIM INDORE, and the duplicate with the Contractor.

IN WITNESS WHEREOF the IIM INDORE has set his hands hereunto and two duplicates hereof through his duly authorized official and the Contractor has caused these presents and two duplicates hereof under his common seal by his duly authorized representative at the place and on the date month and year first herein

above written.

SIGNED, SEALED AND DELIVERED by IIM INDORE, by the hand of

Signature:
Name:
Designation:

IN THE PRESENCE OF

(1) Signature:
Name:
Address:

(2) Signature:
Name:
Address:

SIGNED, SEALED AND DELIVERED BY the Contractor M/s. _____
_____.

Signature:
Name:
Designation:

IN THE PRESENCE OF

(1) Signature:
Name:
Address:

(2) Signature:
Name:
Address:

M. General Conditions of Contract

CLAUSES OF CONTRACT

CLAUSE 1

- (i) The contractor shall submit an irrevocable Performance Guarantee of 5 % (FIVE) 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 'F' 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 'F' 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 Cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at Call receipt of any public sector bank/Banker's Cheque of any public sector bank /Demand Draft of any public sector bank/Pay Order of any public sector bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any public sector 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 IIM Indore 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 IIM Indore to make good the deficit.
- (i) 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 enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After completion of the Defect Liability Period of ONE Year 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 yearwise proportionately.
- (ii) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the Director, IIM Indore 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, IIM Indore 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 service of notice to this effect by Engineer-in-Charge.

- (iii) 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, IIM Indore.

CLAUSE 1 A

Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit IIM Indore 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 IIM Indore 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 IIM Indore 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 IIM Indore 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 therefrom, or from any sums which may be due to or may become due to the contractor by IIM Indore 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 public sector banks or Government Securities (if deposited for more than 12 months) endorsed in favour of the Engineer-in-Charge, 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 shall be collected from the running bills and the final bill of the contractor at the rates mentioned above.

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 lac subject to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 lac. Provided further that the validity of bank guarantee including the one given against the earnest money 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 yearwise proportionately.

Note-1: Government papers tendered as security will be taken at 5% (five per cent) below its market price or at its face value, whichever is less. The market price of Government paper would be ascertained by the Executive Engineer 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 extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the IIM Indore on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in schedule 'F' (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 @ 1.5 % per month of delay for delay of work 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 item or group of items of work for which a separate period of completion is originally given.

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 IIM Indore. In case, the contractor does not achieve a particular milestone mentioned in schedule F, 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 at the final grant of Extension of Time. 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 - Deleted.

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 un-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 so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion 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 within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.
- (iv) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.
- (v) 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.
- (vi) If the contractor shall offer or give or agree to give to any person in IIM Indore 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 IIM Indore.
- (vii) If the contractor shall enter into a contract with IIM Indore 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.
- (viii) If the contractor had secured the contract with IIM Indore as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.
- (ix) 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 proceedings 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 composition 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.

- (x) 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 the court to make a winding up order.
- (xi) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.
- (xii) If the contractor assigns, 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 Director, IIM Indore shall have powers:

- (a) To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, the 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 IIM Indore
- (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. In case contractor wants to close the contract, he shall give notice to the department stating the failure on the part of department. 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 Rs. 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.

If Performance Guarantee is not released within prescribed time limit, then a simple interest @ 0.25% per month shall be payable on Performance Guarantee amount to the contractor from the date of expiry of prescribed time limit.

A compensation for such eventuality, on account of damages etc. shall be payable @ 0.25% of tendered amount subject to maximum limit of Rs. 10 lacs.

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 expenses 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 'F' 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 'F' 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, IIM Indore 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 'F'.

(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 or any other state of art project management tools 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 upto 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 / equipments 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 upto 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 upto 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 IIM Indore to supply or non-availability or break down of tools and Plant to be supplied or supplied by IIM Indore or
- (vii) 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 and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form to the authority as indicated in Schedule 'F'. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

5.4 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension or rescheduling of the milestones shall be communicated to the

Contractor by the authority as indicated in Schedule 'F' in writing, within 3 months or 4 weeks of the date of receipt of such request respectively. 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 the milestones by the authority as indicated in Schedule 'F' and this shall be binding on the contractor.

CLAUSE 6

Measurements of work Done - Deleted.

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 the format of the department 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 authorized 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 department a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer-in-Charge and/or his authorized representative would thereafter check 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 department. Thereafter, the MB shall be taken in the Divisional Office records, and allotted a number as per the Register of Computerised MBs. This should be done before the corresponding bill is submitted to the Division 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 department.

The contractor shall also submit to the department 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 Division 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 hecking 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 department 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. Twenty thousand 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. Twenty thousand, 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 Department 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 'F', 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, Engineer-in-Charge shall prepare or cause to be prepared such bills in which event 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 Asstt. Engineer together with the account of the material issued by the department, 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 @ 7.5% 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 department 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 Asstt. 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 by taking detailed measurements thereof.

Payments in composite Contracts

In case of composite tenders, running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor component shall be made by the Engineer-in-Charge of the discipline of minor component directly 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 for such minor component, Engineer in charge of minor component shall serve the show cause to the main contractor and if reply of main contractor either not received or found unsatisfactory, he may make the payment directly to the contractor associated for minor component as per the terms and conditions of the agreement drawn between main contractor and associate contractor fixed by him. Such payment made to the associate contractor shall be recovered by Engineer-in-charge of major or minor component from the next R/A/ final 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 off 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 to be submitted by the Contractor

The contractor shall submit completion plan as required vide CPWD General Specifications for Civil/Electrical works 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 equivalent to 2.5% of the value of the work subject to a ceiling of Rs.15,000 (Rs. Fifteen thousand only) as may be fixed by the Chief Engineer concerned and in this respect the decision of the Chief Engineer shall be final and binding on the contractor.

The contractor shall submit completion plan for water, sewerage and drainage line plan within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, , the department will get it done through other agency at his cost and actual expenses incurred plus Rs. 15,000/- for the same shall be recovered from the contractor.

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 hereinunder, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Asstt. Engineer, complete with account of materials issued by the Department and dismantled materials.

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

- (ii) If the Tendered value of work is more than Rs.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 @ 7.5% 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 IIM Indore or his signature on the bill or other claim preferred against IIM Indore 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 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 whenever 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-a-vis the Director, IIM Indore.

CLAUSE 10

Materials supplied by IIM Indore-Deleted

CLAUSE 10A

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 IIM Indore.

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 specifications, 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 substituted 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.

CLAUSE 10B

Secured Advance on Non-perishable Materials

(i) The contractor, on signing an indenture in the form to be specified by the Engineer-in-Charge, shall be entitled to be paid during the progress of the execution of the work up to 90% 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.

Mobilization Advance - Deleted.

CLAUSE 10C

Payment on Account of Increase in Prices/Wages due to Statutory Order(s) - Deleted.

CLAUSE 10 CA

Payment due to variation in prices of materials after receipt of tender - Deleted.

CLAUSE 10 CC

Payment due to Increase/Decrease in Prices/Wages (excluding materials covered under clause 10 CA) after Receipt of Tender for Works - Deleted.

CLAUSE 10 D

Dismantled Material IIM Indore Property

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as IIM Indore's property and such materials shall be disposed off to the best advantage of IIM Indore 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 'F' 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 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 upgradation, 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.

12.2 A. For Project and original works:

Deviation, Extra Items and Pricing

In the case of extra item(s) (items that are completely new, and are in addition to the 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, for the work 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.

B. For Maintenance works including works of upgradation, 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.

A. For Project and original works:

Deviation, Substituted Items, Pricing

In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be

substituted) and 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 upgradation, 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 exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of 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 upgradation, aesthetic, special repair, addition/ alteration:

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

The prescribed time limits for finalising rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items are as under:

- (i) If the Tendered value of work is up to Rs. 45 lac : 30 days.
- (ii) If the Tendered value of work is more than Rs 45 lac and up to Rs. 2.5 Crore : 45 days.
- (iii) If the Tendered value of work exceeds Rs. 2.5 Crore : 60 days.

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 F, 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 upgradation, 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 F, 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 Chief Engineer may authorise consideration of such claims on merits.

12.5 For the purpose of operation of Schedule “F”, the following works shall be treated as works relating to foundation unless & otherwise defined in the contract:

(i) For Buildings : All works up to 1.2 metres above ground level or up to floor 1 level whichever is lower.

(ii) For abutments, piers and well staining : All works up to 1.2 m above the bed level.

(iii) For retaining walls, wing walls, compound walls, chimneys, over head reservoirs/ tanks and other elevated structures : All works up to 1.2 metres above the ground level.

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

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

(vi) For Roads, all items of excavation and filling including 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, Engineer-in-charge shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the Engineer-in-Charge

shall give notice in writing to that effect to the contractor 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 utilized 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) IIM Indore 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 IIM Indore 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 IIM Indore, 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 IIM Indore are rendered surplus, the same except normal wastage shall be returned by the contractor to IIM Indore 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 IIM Indore stores, if so required by IIM Indore, shall be paid.

(iv) Reasonable compensation for transfer of T & P from site to contractor's permanent stores or to his other works, whichever is less. If T & P 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 condition.

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 IIM Indore 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 balances 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 IIM Indore from the contractor under the terms of the contract.

A compensation for such eventuality, on account of damages etc. shall be payable @ 0.5% of cost of work remaining incomplete on date of closure i.e. total stipulated cost of the work less the cost of work actually executed under the contract shall be payable.

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 IIM Indore, 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 IIM Indore 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 IIM Indore in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by IIM Indore as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to IIM Indore 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 IIM Indore or where it affects whole of the works, as an abandonment of the works by IIM Indore, 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 IIM Indore, 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 provided 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

Compensation in case of Delay of Supply of Material by IIM Indore -Deleted

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-Incharge, his authorized subordinates in charge of the work and all the superior officers, officer of the Quality Assurance Unit of the Department or any organization engaged by the Department for Quality Assurance and of the Chief Technical Examiner's Office, 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 incharge of the work or to the Chief Engineer in charge of Quality Assurance or his subordinate officers or the officers of the organization engaged by the Department 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 inferior 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 the case of 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 'F' 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 defect liability 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 or if any defect, shrinkage or other faults appear in the work within twelve months (six months in the case of work costing Rs. Ten lacs 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 workmen 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 E&M 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 F. 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 specifications 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, IIM Indore is obliged to pay compensation to a workman employed by the contractor, in execution of the works, IIM Indore will recover from the contractor, the amount of the compensation so paid; and, without prejudice to the rights of the IIM Indore under sub-section (2) of Section 12, of the said Act, IIM Indore 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 IIM Indore to the contractor whether under this contract or otherwise. IIM Indore shall not be bound to contest any claim made against it under sub-section (1) of Section 12, of the said Act, except on the written request of the contractor and upon his giving to IIM Indore full security for all costs for which IIM Indore 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, IIM Indore 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 C.P.W.D. Contractors, IIM Indore 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 IIM Indore under sub-section(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, IIM Indore 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 IIM Indore to the contractor whether under this contract or otherwise IIM Indore 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 IIM Indore full security for all costs for which IIM Indore might become liable in contesting such claim.

CLAUSE 19

Labour Laws to be complied by the Contractor

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

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

Any failure to fulfil 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 19 B

Payment of Wages

Payment of wages:

(i) The contractor shall pay to labour employed by him either directly or through subcontractors, 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 unauthorizedly 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-fulfilment 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 thereunder from time to time.

(vi) The contractor shall indemnify and keep indemnified IIM Indore 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 commission 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 19 D

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 yours,
- (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 IIM Indore, a sum not exceeding Rs.200/- for each default or materially incorrect statement. The decision of the Executive Engineer 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 performance 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 workers employed by the Central Public Works Department and its contractors.

CLAUSE 19 F

Leave and pay during leave shall be regulated as per law/ rule stipulated.

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 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 IIM Indore 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. 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 hereinbefore 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 remodelled 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 19 H

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 (7 ft.) 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'x5') 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 gobi on both sides. The floor may be kutcha but plastered with mud gobi and shall be at least 15 cm (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 purposes and three gallons of clean water per head per day for bathing and washing purposes. 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 contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the labourers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. AE/JE will display a list of contractors working in the colony/Blocks on the notice board in the colony and also at the service centre, to apprise the residents about the same.

CLAUSE 19J

It shall be the responsibility of the contractor to see that the building under construction is not occupied by anybody unauthorized 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 upto 5% of tendered value of work may be imposed by the Chief Engineer whose decision shall be final both with regard to the justification and quantum and be binding on the contractor.

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

CLAUSE 19K

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 each 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 certificate 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 tradesman per

day. Decision of Engineer in Charge as to whether particular tradesman possesses 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- - Deleted.

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 and Abolition) Act, 1970, amended from time to time and rules framed thereunder 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 person in the employ of IIM Indore 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, IIM Indore shall have power to adopt the course specified in Clause 3 hereof in the interest of IIM Indore 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 IIM Indore 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 the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within 15 days request the Chief Engineer in writing for written instruction or decision. Thereupon, the Chief Engineer shall give his written instructions or decision within a period of one month from the receipt of the contractor's letter.

If the Chief Engineer fails to give his instructions or decision in writing within the aforesaid period or if the contractor is dissatisfied with the instructions or decision of the Chief Engineer, the contractor may, within 15 days of the receipt of Chief Engineer's decision, appeal to the Director, IIM Indore who shall afford an opportunity to the contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Director, IIM Indore shall give his decision within 30 days of receipt of contractor's appeal. If the contractor is dissatisfied with the decision of the Director, IIM Indore, the contractor may within 30 days from the receipt of the decision from the Director, IIM Indore, appeal before the Dispute Redressal Committee (DRC) along with a list of disputes with amounts claimed in respect of each such dispute and giving reference to the rejection of his disputes by the Director, IIM Indore. The Dispute Redressal Committee (DRC) shall give his decision within a period of 90 days from the receipt of Contractor's appeal. The constitution of Dispute Redressal Committee (DRC) shall be as indicated in Schedule 'F'. If the Dispute Redressal Committee (DRC) fails to give his decision within the aforesaid period or any party is dissatisfied with the decision of Dispute Redressal Committee (DRC), then either party may within a period of 30 days from the receipt of the decision of Dispute Redressal Committee (DRC), give notice to the Director IIM Indore 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.

(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 Director IIM Indore. 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 Chief Engineer of the appeal.

It is also a term of this contract that no person, other than a person appointed by such Director IIM Indore, 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 120 days 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 IIM Indore 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 thereunder 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 IIM Indore against Patent Rights

The contractor shall fully indemnify and keep indemnified the Director, IIM Indore 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 IIM Indore 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, IIM Indore 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 the 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 Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per District 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

Withholding and lien in respect of sum 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 IIM Indore 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 IIM Indore 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 IIM Indore 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 IIM Indore or any contracting person through the Engineer-in-Charge pending finalization 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 IIM Indore will be kept withheld or retained as such by the Engineer-in-Charge or IIM Indore 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 IIM Indore 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) IIM Indore 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 IIM Indore 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 IIM Indore to the contractor, without any interest thereon whatsoever. Provided that the IIM Indore 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 Chief Engineer or Executive Engineer on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Chief Engineer or the Executive Engineer.

CLAUSE 29A

Lien in respect of claims in other Contracts

Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the Engineer-in-Charge or the IIM Indore or any other contracting person or persons through Engineer-in-Charge against any claim of the Engineer-in-Charge or IIM Indore 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 IIM Indore 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 IIM Indore will be kept withheld or retained as such by the Engineer-in-Charge or the IIM Indore 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 - Deleted.

CLAUSE 31

Unfiltered water Supply and Electricity

The contractor(s) shall make his/their own arrangements for water and electricity required for the work and nothing extra will be paid for the same.

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 IIM Indore either by issue from IIM Indore stocks or purchase made under orders or permits or licenses issued by IIM Indore, 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 IIM Indore 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 licence or permit and/or for criminal breach of trust, be liable to IIM Indore 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

Hire of Plant & Machinery - Deleted.

CLAUSE 35

Condition relating to use of asphaltic materials -Deleted

CLAUSE 36

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 Schedule 'F'. 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 (nonrefundable) shall be effected from the contractor as specified in Schedule 'F' and the decision of the Engineer-In-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable

technical Principal technical representative 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) alongwith 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 misconducts 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 37 - TAXES: -

- i) This works comes under Works contract. The taxes as applicable shall be deducted from each bill paid to the contractor.**
- ii) The contractor should get registered under GST (Goods & Service Tax) or any other tax as applicable as per the extent order on the subject work and same shall be paid by the contractor to concerned department and the same should be considered in his quoted rates.**
- iii) Labour Welfare cess @ 1 % of gross value of work done shall be recovered from each bill paid to the contractor.**
- iv) Income Tax and cess as applicable shall be deducted from each bill paid to the contractor.**
- v) Contractor should be registered under EPF & ESIC and as per law, shall pay EPF & ESIC of contract workers to concerned Department from time to time.**
- vi) Any other taxes/cess as per Government directives shall be deducted from each bill paid to the contractor from time to time or as per rule in case of manufacturer.**

CLAUSE 38: Conditions for reimbursement of levy/taxes if levied after receipt of tenders - Deleted.

CLAUSE 39: Termination of Contract on death of contractor

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Executive Engineer on behalf of the Director, IIM Indore shall have the option of terminating the contract without compensation to the contractor

CLAUSE 40: If relative working in IIM INDORE then the contractor not allowed to tender

The contractor shall not be permitted to tender for works / responsible for award and execution of contracts if his near relative is posted as Accountant or as an officer in any capacity between the grades of the Chief Engineer 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 the IIMI. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department. If however the contractor is registered in any other department, he shall be debarred from tendering in IIMI for any breach 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 41

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 year after his retirement from IIM Indore service without the previous permission of IIM Indore 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 IIM Indore as aforesaid, before submission of the tender or engagement in the contractor’s service, as the case may be.

CLAUSE 42

Return of material & recovery for excess material issued - Deleted.

CLAUSE 43

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 upto 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 the Executive Engineer upto Rs.5,000/- and by the Chief Engineer concerned for a higher amount. The contractor shall be paid for the damages/destruction suffered and for 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 Executive Engineer.

CLAUSE 44

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 thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the Chief Engineer 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 45

Release of Security deposit after labour clearance

Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance deposit after labour 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, on 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.

N.	Proforma of Schedules
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SCHEDULE 'A'

Schedule of quantities (as per Financial Bid).

SCHEDULE 'B'

Schedule of materials to be issued to the contractor. - Deleted.

SCHEDULE 'C'

Tools and plants to be hired to the contractor - Deleted.

SCHEDULE 'D'

Extra schedule for specific requirements/document for the work, if any. - To be intimated later if required.

SCHEDULE 'E'

Reference to General Conditions of contract laid down in the tender document.

Name of Work	“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”
Estimated cost of work	Part-I: Civil & Joinery Rs. 1,03,79,515/- Part-II: Electrical & allied works Rs. 80,98,148/- ----- Total Rs. 1,84,77,663/-
Earnest money	Rs. 3,70,000/- (Rs. Three Lakhs Seventy Thousand Only) (to be returned after receiving performance guarantee)
Performance Guarantee	5 (FIVE) % of tendered value
Security Deposit	2.5% of tendered value

SCHEDULE 'F'

General Rules & Directions

- Officer inviting tender : The Chief Engineer, IIM Indore on behalf of the Director IIM Indore
- 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	Chief Engineer, IIM Indore
2(viii)	Accepting Authority	Director, IIM Indore
2(x)	Percentage on cost of materials and labour to cover all overheads and profits	15%
2(xi)	Standard Schedule of Rates	CPWD DSR 2016
2(xii)	Department	Project Department, IIM Indore
9(ii)	Standard CPWD contract Form GCC 2014, CPWD Form 7/ 8 as modified & corrected	Upto date.

Clause 1

- i. Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance : **10 Days**
- ii. Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above : **15 days**

Clause 2

Authority for fixing compensation under clause 2. : Chief Engineer/ Director, IIM Indore

Clause 2A

Whether Clause 2A shall be applicable : **No.**

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start : **10 Days or date of work order whichever is earlier.**

Mile stone(s) as per table given below:-

Sl. No.	Description of Milestone (Physical)	Time Allowed in months (<u>from date of reckoning start</u>)	Amount to be withheld in case of non-achievement of milestone
1	Dismantling of all the items mentioned in the schedule and get ready the site for construction of cabins	20 Days	Rs. 5,00,000/-
2	Completion of minimum 10 faculty cabins in all respect	2.5 Months	RS. 10,00,000/-
3	Project Closure: Completion of entire project including all civil, electrical & allied works and handover of the same to the IIM Indore Authority	04 months	Imposition of Liquidated damages in terms of clause 2 of the agreement

Time allowed for execution of work : 04 (FOUR) Months including rainy season

Authority to decide:

- (i) Extension of time : Chief Engineer/Director, IIM Indore
- (ii) Re-scheduling of mile stones : Chief Engineer, IIM Indore
- (iii) Shifting of date of start in case of delay in handing over of site : Chief Engineer, IIM Indore

Clause 6, 6A

Clause applicable - (6 or 6A) : 6 A

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. 50 (FIFTY) Lakhs**

Clause 10A

List of testing equipment to be provided by the contractor at site lab.- Deleted.

Clause 10B(ii)

Whether Clause 10 B (ii) shall be applicable : Yes

Clause 10 C - Deleted.

Clause 11

Specifications to be followed for execution of work

: Relevant BIS code, CPWD Specifications with up-to-date correction slips and OEMs specifications as applicable.

Clause 12

Type of work: “Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”

12.2 & 12.3

Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for work : 50%

Clause 16

Competent Authority for Deciding reduced rates : Director IIM Indore.

Clause 25

Constitution of Dispute Redressal Committee (DRC) : Construction Committee of IIM Indore.

Clause 36 (i)

Requirement of Technical Representative(s) and recovery Rate

Sl no	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical /Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1	Graduate Engineer	Civil or eqv	Site Engineer	Graduate Engineer with	1	Rs. 25,000/-	Rupees twenty five

				minimum 2 year experience			thousand only
2	Graduate Engineer	Electrical or eqv	Site Engineer	Graduate Engineer with minimum 2 year experience	1	Rs. 25,000/-	Rupees twenty five thousand only

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 year relevant experience with a reputed construction co. 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.

O. Special Conditions of Contract

1. The tenderer shall acquaint himself with the proposed site of work.
2. If for any reasons, any part of the site is not available temporarily for some time for part of the work under the contract, the agreed construction schedule shall be suitably modified and contractor shall diligently divert his men and materials to utilize them appropriately, profitably and no claim of damages whatsoever shall be entertained on this account. However, the contractor shall be allowed extension of time for completing the work as deemed fit by the competent authority. The contractor shall also not be entitled to any compensation for any loss suffered by him and revision in the rates quoted by him.
 - a. On account of delay in commencing the work by the contractor.
 - b. On account of reduction in the scope of work.
 - c. On account of suspension of work or abandoned after award of work.
3. The contractor shall make his own arrangement for obtaining electric connection required for execution of work and make necessary payments directly to the concerned departments and nothing extra shall be payable on this account. The contractor shall make his own arrangement for water suitable for construction.
4. The contractor shall provide, at his own cost instruments for surveying, weighing and measuring purpose at the site of work as may be necessary for execution of the work.
5. The contractor shall construct a sample unit of different activities complete in all respect as per the directions of the Engineer-in-charge and Architect. This sample unit shall be got approved from the Engineer-in-charge and Architect before commencing the mass work.
6. The contractor shall take care of all safety precautions pertaining to construction of work, such as scaffolding, ladder, working platforms, gangways, electric arc/ gas welding, use of hoist and construction machinery.
7. On account of security consideration, some restrictions may be imposed by the security staff on the working and/ movement of men and materials etc. The contractor shall be bound to follow all such restrictions/ instructions and he shall organise his work accordingly. No claim on this account, whatsoever, shall be payable.
8. 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 existing/ new work due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work.
9. The contractor shall be responsible for the watch and ward of all materials brought by the contractor to site against pilferage and breakage during the period of installation and thereafter till the works are physically handed over to the department.
10. The contractor shall take all preventive measures against any damage caused by

- rain, snowfall, floods or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the Owners property and to the work for which the payment has been advanced to him under the contract. However, the contractor shall maintain an equal to the payment received against the work done, at his own cost. This will also cover the defect liability period. This shall be favouring the Director, Indian Institute of Management Indore. Nothing extra on this account shall be payable to the contractor for maintaining such insurance Policy.
11. The work will 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.
 12. The contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which may be liable.
 13. The contractor shall give due notices to Municipal, Police and/or other authorities that may be required under the law/rules under force in the area and obtain all requisite licenses for temporary obstructions / enclosures and pay all charges which may be leviable on account of his execution of work under the agreement. Nothing extra shall be payable on this account.
 14. All materials to be incorporated in the work shall be arranged by the contractor and shall be in accordance with the specifications laid down.
 15. The tenderer shall use materials bearing ISI Certification Mark unless otherwise specified or allowed in writing by the Engineer-in-Charge. Any material banned by the department shall not be used in the work.
 16. The contractor shall submit to the Engineer-in-charge and Architect samples of all materials for approval. Such samples of materials which affect aesthetics of the work shall also be got approved from the Engineer-in-charge and Architect of the project before procuring bulk supplies. These approved samples shall be preserved and retained in the custody of the Engineer-in-charge as standards of materials till the completion of the work. The cost of such samples shall be borne by the Contractor and nothing shall be payable on this account over the Agreement rates.
 17. The contractor shall be required to get all the necessary mandatory and other tests as per the specifications/ IS codes, carried out on materials/ work from an approved laboratory as per the direction of the Engineer-in-charge. The testing charges and conveyance from the site shall be borne by the contractor.
 18. In case any material / work is found sub-standard the same shall be rejected by the Engineer-in-charge/ Architect representative and the same shall be removed from the site of work within 48 hours, failing which the same shall be got removed by the Engineer-in-charge at the risk and cost of the contractor without giving any further notice and time.

19. In order to ensure quality of work during its execution, the Engineer-in-charge/ Architect representative may require samples for mandatory or routine testing of materials. All costs of these samples, their packaging, conveyance from the site to the testing laboratory and return, shall be borne by the contractor.
20. Even ISI marked materials may be subjected to quality test at the discretion of the Engineer-in-charge/ Architect. Whenever ISI marked materials are brought to the site of work the contractor shall, if required by the Engineer-in-charge/ Architect, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the materials procured by the contractor, satisfy the provisions of relevant ISI codes. The testing charges shall be borne by the contractor. However cement/steel will be necessarily tested before start of work and also during the execution of work as per the requirements of specifications and will not be used till test certificates are obtained and approved by Engineer-in-Charge/ Architect.
21. The contractor shall supply free of charge the material required for testing. The cost of tests shall be borne by the contractor.
22. Secured advance for material if so desired by the contractor, will be given as per CPWD rules/regulation/norms on production of test certificate from the manufacturer.
23. The work shall be executed and measured in metric system. The metric dimensions given in the schedule of quantities and drawing etc. shall be followed. (The dimension in FPS units wherever indicated are for guidance only) The figures in the drawings shall be followed.
24. The contractor shall be responsible for completing the work and for satisfying all terms and conditions of the Contract without any extra payment over his quoted rates unless otherwise specified. The contractor shall quote his rate for various items of work accordingly and no claim whatsoever shall be entertained for any incidental or extra work involved in the execution of the work as per nomenclature of the item and the specifications indicated in the tender documents.
25. Subject to the nomenclature of the item as per schedule of quantities, the specification indicated in the tender documents, the rates quoted shall include cost of all materials including royalty and taxes if any, labour, sundry inputs, execution of work at all heights, levels, pattern and design for all leads, lifts and depths including overhead charges and contractor's profit. Nothing extra shall be paid on this account.
26. The rate shall be inclusive of making design, pattern and execution of work as per Architectural and structural drawings, at all levels and heights.
27. The rates shall be inclusive of making any holes in walls/ RCC work for fixing any fixture/ frame work and making good the structure to its original shape and finish.

28. The rate shall be inclusive of working under water and adverse of foul conditions and including pumping out or bailing out water, unless otherwise specified in the nomenclature. This will include water encountered from any source such as rains, floods and any other cause whatsoever and including sub-soil water.
29. Other agencies doing works related with this project will also simultaneously execute the works and the contractor shall afford necessary co-ordination for un-hindered completion of these sub-works.
30. The contractor shall leave necessary holes, opening, etc. as may be directed by the Engineer-in-charge for laying, burying or fixing, conduits, pipes, boxes, hooks, fans etc. Conduits for electrical wiring/cables will be laid in a way that they leave enough space for concreting and do no adversely affect structural members.
31. The contractor shall give a satisfactory performance test of installations individually and as a whole to ensure their proper functioning before the work is finally declared and completed and accepted.
32. The contractor shall continue to maintain watch and ward to safeguard the Owner's property in his possession until the same is formally handed over as per directions of the Engineer-in-charge. Nothing extra over agreement rates shall be paid on this account.
33. All tools, plants and measuring or weighing equipment shall be arranged by the contractor himself and nothing extra shall be paid to the contractor on this account.
34. The quantities of various items incorporated in the tender are approximate. However, the payments shall be made to the contractors on the basis of actual measurements taken at site.
35. The contractor shall protect the adjoining buildings or works and the work under execution from fire and shall make adequate arrangements for fire protection and fire fighting and if any property is damaged, by fire due to the negligence of the contractor, the same shall be made good by the contractor at his own cost, to the entire satisfaction of Engineer-in-charge.
36. The contractor shall provide adequate lighting arrangements as approved by the Engineer-in-charge for carrying out the work during night time, if so required and also provide all other facilities for the labour employed to carry out the work as per direction of Engineer-in-Charge.
37. In order to achieve the targeted date of completion the contractor may have to work in multiple shifts, round the clock including public and gazetted holidays and nothing extra shall be paid on this account.

38. The contractor shall get the samples of all the materials to be used, in the work approved from Engineer-in-Charge and Architect before going for bulk procurement. Bulk procurement shall be taken up only after obtaining approval from the Engineer-in-charge. Any delay in getting the samples approved shall be contractor's responsibility.
39. All materials, articles and workmanship shall be of respective best quality and kind for the class described in the schedule of quantities and specifications. All materials, so used in different items of work shall be subject to the approval of the Engineer-in-charge and Architect.
40. The contractor shall be responsible for all statutory provisions and deductions towards ESI, PF or any other, as the case may be or any other levies and taxes shall be borne by the contractors. The TDS and Contract Tax or any other statutory levels/taxes incorporated from time to time shall be deducted progressively from the running account bills, as applicable at the time of payment. No claim in this regard shall be entertained.
41. The contractor is supposed to abide the minimum wages act, and shall produce all records to the Engineer-in-charge or any other statutory authority as and when called for. The Engineer-in-charge does not hold any responsibility on account of any lapses in this regard.
42. No extension of time shall be granted to the contractor on account of rains or inclement weather conditions.
 - (a) For any clarification/ doubt, the Institute may organize regular meetings with Contractor. The contractor shall attend such meetings invariably as and when required.
 - (b) In respect of the work of other agencies, where the commencement or progress of such work of any other agency is dependent upon the completion of particular portions of the contractor's work or generally upon the contractor maintaining progress in accordance with the approved coordinated construction programme, it shall be the responsibility of the Contractor to complete such portions and maintain such progress.
 - (c) Should any difference arise between the contractor and the other agencies, these shall immediately be brought to the attention of the Engineer-in-Charge who after reviewing the matters causing the differences will give their decision which shall be final and binding on the contractor.
 - (d) The contractor shall have to do all drilling of holes and cutting of walls, chases or other elements of the building for the complete and proper installation of the pipe lines/ ducts and other equipments by using electrically operated tools such as drills/ chases cutting machine etc. Manual drilling or chiseling or cutting shall be permitted on special request only.

- (e) No chiseling or cutting or drilling of RCC columns, beams, girders and other principal structural members shall be done unless prior permission has been granted by the Engineer-in charge in writing.
 - (f) All chases and openings made by the contractor for his pipe lines shall be filled/ covered over with cement plaster in reasonable manner. Before rough plastering on the pipe surfaces the concealed pipes shall be secured to the wall by using proper supports/ clamps.
 - (g) After completion of work and before issuance of certificate of virtual completion the contractor shall submit eight (8) sets to the Engineer-in-charge, layout drawing drawn at appropriate scale and with 2 copies on Compact disc indicating the complete system 'as installed', with written approval of Engineer-in-charge on the 8 sets.
 - (h) The contractor shall prepare and produce instruction, operation and maintenance manuals in English for the use, operation and the maintenance of the supplied equipment and installations, and submit to the Engineer-in-charge in (8) copies at the time of handing over. The same should be generally consist of the following:
 - (i) Description of the project
 - (ii) Operating instructions
 - (iii) Maintenance instructions including procedures for preventive maintenance
 - (iv) Manufacturer's catalogues.
 - (v) Spare parts list
 - (vi) Trouble shooting charts
 - (vii) Drawings
 - (viii) Type and routine test certificates for major items.
 - (ix) One (1) set of reproducible 'as built' drawings on polyester film.
43. The contractor shall be provided adequate storage/ office space for his use. The space has to be maintained/ constructed by the contractor as per his usage requirements.
44. All spaces allotted to the contractor as described above shall be vacated and all structures removed from site at any time as and when required and directed by the Engineer-in-charge, unconditionally and without any reservation. The Engineer-in-charge will not be obliged to give any reason for such removal. Upon receiving instructions to vacate the space, the contractor shall immediately remove all his structures, materials, etc. from the sources and clear and clean-up the site to the satisfaction of the Engineer-in-charge.
45. It shall be the responsibility of the Contractor to safeguard the site and ensure that no illegal encroachments are made by outside elements within the area allotted to the contractor. Upon completion of the work or earlier as required by Engineer-in-Charge, the contractor shall vacate the land totally without any

reservation.

46. The contractor will arrange to erect, at his own cost, barbed wire or other appropriate fence around the infrastructure site, with entry/exit gates at suitable points. The contractor shall, at his own cost, provide and erect suitable fencing around the spaces allotted to him at the infrastructure sites to ensure the security of his men. Materials and equipment within the sites and in relation to other contractors who will also be allotted spaces at above sites.
47. The security of workmen, materials, equipment stores etc. within the area allotted to the contractor shall be the responsibility of the contractor.
48. The site of work shall have required equipments for various tests at site by the contractor at his own cost and nothing extra shall be payable on this account.
49. The contractor shall arrange minimum plant and equipments at site for the execution of work. These may have to be increased depending on the requirement site.
50. The quantities indicated are for guidance only however it may vary to any extent and the contractor should not have any financial or other implications for such variations. The owner reserves to reduce the scope of work of any item if the contractor fails to deliver the works in time and the contractor shall not ask for any financial consideration for such deletion of scope of the work.
51. Any item which is not available in the BOQ shall be paid as per DSR 2014 rates. If it is not available in BOQ & DSR 2014 then extra item shall be worked out as actual cost of the materials and actual cost of the labour plus 15% as overhead and profit. The decision of Engineer-in-charge will be conclusive and final binding on the contractor.
52. The contractor shall take photographs of site prior to commencement of work, during construction and after completion of work as suggested and shall submit the photographs in soft and hard copies to IIM and Architect for which no extra payment will be made.
53. If required and directed by Engineer-In-Charge, contractor shall arrange visits of his personnel comprising of Engineer-In-Charges to various places/ plants in or out side Indore to check and verify the quality of material at manufacturer's places. No extra cost shall be given for this to contractor.
54. Layout of works shall be got checked by Engineer-in -charge & only then further work shall be taken by after approval.
55. Proforma of Registers to be as per standard CPWD formats.

P. Technical Specifications

PARTICULAR SPECIFICATION FOR CIVILWORK

1.0 GENERAL

1.1 Subject to the nomenclature of the item and the specifications indicated hereafter the work, in general shall be carried out in accordance with the CPWD Specifications 2009 read with correction slips issued up to the date of receipt of tenders and relevant ISCODES.

1.2 Wherever reference to any Indian Standards Specifications 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.

1.3 Before commencement of the work the contractor shall co-relate nomenclature of the items with all the relevant architectural and structural drawings to satisfy himself that the information available there from is complete and unambiguous. The figures and written dimensions on the drawing shall be followed. The dimensions shall not be scaled out. The contractor shall submit for approval of Engineer-in-charge his workshop drawings and the sample of work to be performed under the specified items of work before actually commencing the mass execution of work under the item. Nothing extra shall be payable on this account.

1.4 The discrepancy in the drawings issued if any shall be brought to the notice of engineer in charge for immediate decision before execution of the work. The contractor, alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous information and no claim whatever shall be entertained on this account.

1.5 In the event of any difference or discrepancy in the description of any item or its specifications, the same shall be resolved in the following sequence and decision of Engineer-in-charge shall be conclusive, final and binding on the contractor.

- a) The nomenclature of the item shall take precedence over all and anything stated elsewhere.
- b) The condition and specifications attached to the tender documents shall take precedence over the provisions of CPWD specifications 2009 (Volume I & II) with up to date correction slips and relevant IS Codes.
- c) The specifications 2009 (Volume I & II) amended correction slip up to the date of opening tender shall take precedence over provisions of relevant IS Codes.

d) In case, it is not possible to resolve the dispute with the help of tender documents the provisions of relevant I.S.Codes shall be relied upon.

e) In case, it is not possible to resolve the dispute with the help of any above stated documents the decision and directions of Engineer-in-charge shall be followed for execution and completion of any item of work.

2.0 ANTI - TERMITE TREATMENT

1.0 GENERAL

1.1 Pre-constructional anti-termite treatment shall be provided to all buildings with a chemical barrier against the sub-terrain termites.

1.2 Anti-termite treatment being a specialized job, should be got executed through specialized agencies only. The specialized agency should be preferably a member of the Indian Pest Control Association.

1.3 The scope of pre-constructional anti-termite treatment covers the soil treatment with approved chemicals in water emulsion in foundation trenches for columns, plinth beams, pile caps, brick walls, service trenches, lift pits, steps, ramps etc., in top surfaces of plinth filling, at junction of walls and floor, in expansion joints etc., in stages as detailed in this specifications and drawings, unless otherwise specified, the anti-termite treatment will be carried out as per IS : 6313 (Part-II)-2001 and or as per direction of the Engineer.

2.0 Chemical to be used

2.1 The following chemical in water emulsion, after approval from the Engineer, shall be used uniformly over the area to be treated.

Chemical with Percent	Relevant Indian Standards	Concentration by weight (Active ingredient)
Chlorpyrifos 20EC	IS 8944	1.0
Lindane 20EC	IS 632	1.0

2.2 The Tenderer should produce voucher(s) for the chemical purchased and should get verify the sealed container(s) of the specified chemical from the Engineer before preparing the emulsion / use for the treatment.

2.3 Guarantee

2.3.1 The Tenderer has to furnish the guarantee for 10 (Ten) years from the date of completion of work, stating that in case of reappearance of termites within the building area due to defective materials or workmanship or due to any other reasons, the Tenderer will carry out the necessary post constructional treatment to keep the entire area free from termite, once again, without any extra cost to the Client during the guarantee period.

3.0 PLAIN AND REINFORCE CONCRETE & ALLIED WORKS

1.0 SCOPE

1.1 This specification covers the general requirements for concreting to be used on jobs using on-site production facilities including requirements in regard to handling, storage of ingredients, proportioning, batching, mixing and testing and quality assurance. This also covers the transportation of concrete from the mixer to the place of final deposit and the placing consolidation, curing, protecting, repairing and finishing of concrete.

1.2 The Tenderer shall carry out all works meant within the intent of this specification even if not explicitly mentioned herein. All works shall be executed to the satisfaction of the Engineer.

2.0 CODES AND STANDARDS

2.1 All work shall be carried out as per the stipulations contained in various sections of these specifications and the latest Indian Standards, Acts, Codes and best practices.

2.2 All applicable standards, specifications, etc. and codes of practice shall generally be the latest editions, including all applicable official amendments and revisions. A complete set of all these documents shall generally be available at site, with the Tenderer.

2.3 In case of conflict between the stipulations contained in various sections of these specifications and stipulations of Indian Standards, Codes, etc. the requirements of stipulations contained in various sections of these specifications, shall prevail over that of Indian Standards, Codes, etc.

2.4 The following are the various relevant Indian Standards:

IS : 280	1978	Specification for mild steel wire for general Engineering purposes
IS : 383	1970	Specification for coarse and fine aggregates from natural sources for concrete
IS : 432 (Parts I)	1982	Specification for mild steel medium tensile steel bars and hard drawn steel wire for concrete reinforcement- Mild steel & medium tensile bars
IS : 432 (Parts II)	1982	Specification for mild steel medium tensile steel bars and hard drawn steel wire for concrete reinforcement - Hard drawn steel wire
IS: 456	2000	Code of practice for plain and reinforced concrete
IS: 516	1959	Method of test for strength of concrete
IS : 650	1991	Specification for standard sand for testing of cement

IS: 800	1984	Code of practice for general construction in steel
IS: 1161	1998	Specification for steel tubes for structural purpose
IS : 1786	1985	Specification for high strength deformed steel bars and wires for concrete reinforcement.
IS : 2386 1)	1963	Methods of test of aggregates for concrete - Particle size & shape
IS : 2386 2)	1963	Methods of test of aggregates for concrete - Estimation of deleterious material and organic impurities
IS : 2386 3)	1963	Methods of test of aggregates for concrete - Specific gravity, Density, voids, absorption and bulking
IS : 2386 4)	1963	Methods of test of aggregates for concrete - Mechanical properties
IS : 2386 5)	1963	Methods of test of aggregates for concrete - Soundness
IS : 2386 6)	1963	Methods of test of aggregates for concrete - Measuring mortar making properties of fine aggregates

IS : 2502	1963	Code of practice for bending and fixing of bars for concrete reinforcement.
IS : 2571	1970	Code of practice for laying in-situ cement-concrete flooring.
IS : 2645	2003	Specification for Integral cement water proofing compounds for cement mortar and concrete
IS : 3150	1982	Specification for hexagonal wire netting for general purposes.

IS : 3384	1986	Specification for bitumen primer for use in waterproofing & damp proofing.
IS : 4130	1991	Safety Code for demolition of buildings.
IS : 4326	1993	Code of practice for earthquake resistant design and construction of buildings.

IS : 5525	1969	Recommendations for detailing of reinforcement in reinforced concrete work.
IS: 8112	1989	Specification for 43 Grade Ordinary Portland Cement
IS : 10262	1982	Recommended guidelines for concrete mix design.
SP : 23	1982	Handbook of concrete mixes.
SP : 24	1983	Explanatory Handbook on IS: 456
SP : 34	1987	Handbook on concrete reinforcement and detailing.

3.0 MATERIALS

3.1 General

3.1.1 All the materials used in the manufacture of concrete shall be in accordance with these specifications, Storage and Handling of Common Building Materials, which shall be deemed to form a part of this specification.

3.1.2 The Engineer shall have the right to inspect the sources of materials, the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment's and the quality control system. The Tenderer shall arrange such an inspection and the Engineer approval shall be obtained prior to starting the work.

3.2 Aggregates

3.2.1 All aggregates shall conform to I.S.383-1963. Aggregates shall, where possible, be derived from a source that normally produces aggregates satisfactory for concrete and if requested by the Engineer the Contractor shall supply evidence to this effect. If he is instructed to do so the Contractor shall supply samples of the aggregates for the purpose of making preliminary concrete test cubes as hereinafter specified.

3.2.2 Aggregates shall consist of naturally occurring sand and gravel of stone, crushed or uncrushed, or a combination thereof. They shall be hard, strong, dense, durable, clean and free from veins and adherent coatings. As far as possible, flaky, and elongated pieces should be avoided.

3.2.3 Deleterious Materials:

Aggregates shall not contain any harmful material such as iron pyrites, coal, mica, shale or similar laminated material, clay, soft fragments, alkali, sea shells, organic, impurities etc. in such quantity as to affect the strength or durability of the concrete or in addition to the above, for reinforced concrete, any material which might attach the reinforcement. Aggregates which are chemically reactive with the alkalis of cement harmful, as cracking of concrete may take

3.2.4 Fine Aggregates:

The fine aggregate shall be best quality locally available natural Part I Particle size and shape, shall be described as fine aggregates, Grading Zones I, II, III and iv. Where the grading falls outside the limits of any particular grading zone of selves other than 600 micron is sieve by a total amount not exceeding 5 per cent it shall be regarded as falling within that grading Zone. This tolerance shall not be applied to percentage passing the 500 micron is sieve or to percentage passing any other sieve size on the coarsen limit of Grading Zone I on the finer limit of Grading Zone IV. sand around derived by crushing suitable gravel of stone and sand shall be free from coagulated lumps. Sand derived from a stone unsuitable for coarse aggregate shall not be used in fine aggregate

The grading of fine aggregate, when determined as described in ISS 2386 (Part-I - Methods of test for Aggregates for Concrete

Table III fine Aggregate

Percentage passing for

	Grading	Grading	Grading	Grading
	Zone I	Zone II	Zone III	Zone IV
10mm	100	100	100	100
4.75mm	90-100	90-100	90-100	95-100
2.30mm	60-95	75-100	85-100	95-100
1.15mm	40-70	55-99	75-100	90-100
micron	15-34	35-99	60-79	80-100
micron	5-20	8-30	12-40	15-50
micron	0-10	0-10	0-10	0-15

3.2.5 Coarse Aggregate:

The coarse aggregate shall be crushed stone or crushed or uncrushed gravel. Other materials having the characteristics specified later for coarse aggregate shall not be used without approval.

The pieces of aggregate shall be angular or, except for concrete surfaces subject to abrasion, rounded in shape and shall have granular or crystalline or smooth (but not glassy) non-powdery surfaces. Friable, flaky and laminated pieces, plea, and shale shall only be present is such not to affect adversely the strength the durability of the concrete as ascertained by tests concrete cubes as specified later. The strength of the aggregate shall be such that the aggregate crushing value –as specified in I.S.383 shall not exceed 45 percent or 30 percent for concrete surfaces subject to abrasion.

After twenty four hours" immersion in water, a previously dried sample shall not have gained in weight more than 5 per cent and not more than 10 per cent if it is to be used in place concrete or elsewhere if described.

The grading shall be according to table II of I.S.383.

3.4 Cement

3.4.1 The cement generally used shall be the Ordinary Portland Cement 43 grade (make. A.C.C., L&T, J.K., or Birla, Ultratech) conforming to relevant IS codes. However, any special type of cement such as High strength cement or sulphate resisting cement may be used under specific circumstances

3.4.2 The Tenderer shall make his own arrangements for the storage of adequate quantity of cement. If supplies are arranged by the Department, cement will be issued in quantities to cover work requirements of one month or more, as

deemed fit by the Engineer and it will be the responsibility of the Tenderer to ensure adequate and proper storage, which will provide complete protection from dampness, contamination and minimize caking and false set. Cement bags shall be stored in a dry enclosed shed (storage under tarpaulins will not be permitted), well away from the outer walls and insulated from the floor to avoid contact with moisture from ground and so arranged as to provide ready access. Damaged or reclaimed or partly set cement will not be permitted to be used and shall be removed from the site. The storage arrangements shall be such that there is no dead storage. Not more than 12 bags shall be stacked in any tier. The storage arrangement shall be got approved by the Engineer. Consignments of cement shall be stored as received and shall be consumed in the order of their delivery. Daily Stock register shall be maintained and shall be open for inspection at any point of time.

3.4.3 It shall be stored in a dry place, in regular piles not exceeding ten page high and in such a manner that it will be efficiently protected from moisture and contamination, and that the consignments can be used up in the order in which they are received. If necessary, cement shall be screened at contractor" s expense to remove any lumps. No cement which has become damaged shall be used in the work but shall be immediately removed from the work and replaced by the contractor at his own expenses.

3.4.4 If desired tests shall be made by taking samples of cement from stores or elsewhere from the works. The selection of samples and procedure for testing shall comply with the appropriate I.S. standard

3.5 Water

3.5.1 Water for making concrete or mortar shall be clean and fresh and free from acid, oil, pollution from industrial or farmyard waste, or other organic or inorganic matter in solution or suspension in amounts which in the opinion of the Engineer will impair the strength or durability of the concrete or mortar. Water shall be obtained from a public supply where possible, it shall be taken from a spring, well, river, lake, or similar only if approved.

3.5.2 Only approved water shall be used for washing out shuttering and for mixing concrete.

3.5.3 If instructed, samples of water shall be submitted for analysis or making concrete tests. The samples shall be taken in such a manner as to ensure true representation of the water. Two or more samples as instructed shall be collected in clean Winchester quarts or similar glass containers, which shall be rinsed out

twice with the proposed water. The containers shall be filled by submerging them in the water without disturbing any sediment in the stream bed or other source of supply. The samples shall be labeled and dispatched as instructed.

3.5.4 Potable water is generally considered satisfactory for mixing concrete. The maximum permissible values of impurities shall be as given in clause no. 5.4 of IS:456.

3.6 ADMIXTURES

3.7.1 Admixtures in concrete for promoting workability, entraining air for similar purposes may be used only after the written permission from the Engineer is obtained. These shall be free from injurious amount of chloride, etc. Addition of admixtures should not reduce the specified strength or durability of concrete and should not have detrimental effect on reinforcement. The admixtures shall conform to IS-9103 and shall be of proven make and from a reputed manufacturer. Calcium chloride as accelerating admixture is not permitted to be used other than in mass concrete works. The Tenderer shall produce latest test results carried out at approved Government Test Houses for the approval of the Engineer, before use.

4.0 CEMENT ADDITIVES/ADMIXTURES IN CONCRETE

4.1 The admixtures shall conform to IS:9103 and shall be of proven make and from a reputed manufacturer. In addition, for plasticizer-cum-water proofing compound, materials shall meet the permeability requirements as per IS-2645. Similarly for plasticizer-cum retarder admixture material shall satisfy the setting time requirements of retarder and other properties of plasticizer as per IS:9103

4.2 Admixtures in concrete for promoting workability, improving strength, entraining air or for similar purposes may be used only after the written permission from the Engineer, is obtained. Addition of admixtures shall not reduce the specified strength or durability of concrete in any case

5.0 GROUTING

5.1 Ready mixed non-shrink cementitious grout for Grouting under base plates and foundation pockets shall be done as indicated in the drawings, or as directed by Engineer. The contact area between the grout and base plate shall not be less than 80%

5.2 Grouting of pockets/holes in concrete: shall be done using cement-sand grout or cement, sand and aggregate grout depending upon the size of the pockets/holes in the concrete. This mix shall generally be used for grout thickness above 40 mm for dry pack application. Normally the grade of such concrete/mortar shall not be less than the grade of parent concrete. In filling the holes of foundation bolts and expanding admixture of approved type shall be used as per manufacturer's specification.

5.3 Surface to be grouted shall be thoroughly roughened and cleaned of all foreign matter and laitance. The block outs, bolt holes etc. which have to be grouted, shall

be cleaned thoroughly by use of compressed air just prior to taking up the grouting operation.

6.0 BRICK

6.1 Bricks used in the masonry may be of the following type.

The Common Burnt Clay Bricks shall conform to IS:1077 and shall be hand moulded or machine moulded. They shall be free from nodules of free lime, visible cracks, flaws warpage and organic matter, have a frog 100 mm in length 40 mm in width and 10 mm to 20 mm deep on one of its flat sides. Each brick shall be marked (in the frog where provided) with the Manufacturers identification mark or initials. Bricks shall be FPS brick of class designation 7.5(75). The bricks shall have smooth rectangular faces with sharp corner and shall be uniform in colour and emit clear ringing sound when struck

6.2 Sampling and Tests

Samples of bricks shall be subjected to the following minimum tests:

- a) Dimensional tolerance.
- b) Water absorption.
- c) Efflorescence.
- d) Compressive strength.

The test result should be within the limit specified in CPWD Specification 2009 Volume. I.

7.0 BRICK WORK

7.1 Classification:-The brick work shall be classified according to the class designation of bricks used.

7.2 Mortar:-The mortar for the brick work shall be as specified, and conform to accepted standards.

7.3 Soaking of Bricks:-Bricks shall be soaked in water before use for a period for the water to just penetrate the whole depth of the bricks.

7.4 Bricks shall be laid in English Bond unless otherwise specified. For brick work in half brick wall, bricks shall be laid in stretcher bond. Half or cut bricks shall not be used except as closer where necessary to complete the bond. Closers in such cases, shall be cut to the required size and used near the ends of the wall. Header bond shall be used preferably in all courses in curved plan for ensuring better alignment.

7.5 Header bond shall also be used in foundation footings unless thickness of walls (width of footing) makes the use of headers impracticable. Where thickness of footing is uniform for a number of courses, the top course of footing shall be headers.

7.6 All loose materials, dirt and set lumps of mortar which may be lying over the surface on which brick work is to be freshly started, shall be removed with a wire brush and surface wetted. Bricks shall be laid on a full bed of mortar, when laying, each brick shall, be properly bedded and set in position by gently pressing with the handle of a trowel. Its inside face shall be buttered with mortar before the next brick is laid and pressed against it. Joints shall be fully filled and packed with mortar such that no hollow space is left inside the joints.

7.7 The walls shall be taken up truly in plumb or true to the required batter where specified. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. Vertical joints in the alternate course shall come directly one over the other. Quoin, Jambs and other angles shall be properly plumbed as the work proceeds.

7.8 The brick work shall be built in uniform layers.

7.9 No part of the wall during its construction shall rise more than one metre above the general construction level. Parts of wall left at different levels shall be raked back at an angle of 45 degrees or less with the horizontal. Tothing shall not be permitted as an alternative to raking back. For half brick partition to be keyed into main walls, indents shall be left in the main walls.

8.0 FINISHING

8.1 CEMENT PLASTER

The cement plaster shall be 12 mm, or 18 mm thick as specified in the item.

8.2 Preparation of Surface

The joints shall be raked out properly. Dust and loose mortar shall be brushed out. Efflorescence if any shall be removed by brushing and scrapping. The surface shall then be thoroughly washed with water, cleaned and kept wet before plastering is commenced. In case of concrete surface if a chemical retarder has been applied to the form work, the surface shall be roughened by wire brushing and all the resulting dust and loose particles cleaned off and care shall be taken that none of the retarders is left on the surface.

8.3 Mortar

The mortar of the specified mix using the type of sand described in the item shall be used. It shall be as specified in the item. For external work and under coat work, the fine aggregate shall conform to grading IV. For finishing coat work the fine aggregate conforming to grading zone V shall be used.

8.4 Application of Plaster

8.5 Ceiling plaster shall be completed before commencement of wall plaster.

Plastering shall be started from the top and worked down towards the floor. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. To ensure even thickness and a true surface, plaster about 15 × 15 cm shall be first applied, horizontally and vertically, at not more than 2 metres intervals over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in the plane of the finished plaster surface. The mortar shall then be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness. This shall be brought to a true surface, by working a wooden straight edge reaching across the gauges, with small upward and side ways movements at a time. Finally the surface shall be finished off true with trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive towelling or over working the float shall be avoided.

All corners, arrises, angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arrises, provision of grooves at junctions etc. where required shall be done without any extra payment. Such rounding, chamfering or grooving shall be carried out with proper templates or battens to the sizes required.

8.6 Curing

Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered. The plaster shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages at the contractor's expense by such means as the Engineer-in-Charge may approve. The dates on which the plastering is done shall be legibly marked on the various sections plastered so that curing for the specified period thereafter can be watched.

8.7 Finish

The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5 m long and with plumb bobs. All horizontand surfaces shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds.

9.0 Guarantee Bond & Security Deposit for Aluminium Work

Five years guarantee bond in prescribed proforma 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 against structural stability, water leakage, faulty materials, workmanship and defective anodised finish.

In addition (Five) percent of the cost of this work shall be retained as security deposit and the amount so withheld would be released after Five years from the date of completion of the entire work under the agreement. If the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period it shall be rectified by the contractor along with any incidental repairs to

structure, flooring, finishing, fixtures and any other related damaged work within fifteen days of receipt of intimation of such defects in the work. If the defects pointed out are not attended to within the specified period, the same shall be got done from another agency at the risk and cost of the contractor and the cost of attending such repair shall be deducted from any dues payable to the contractors. However, the security deposit deducted may be released in full against bank guarantee of equivalent amount in favour of Indian Institute of Management Indore in the prescribed proforma. The security deposit against this item of work shall be in addition to the security deposit deducted @5 % of the Tender cost.

INTERIOR WORK SPECIFICATIONS:

1. FALSE CEILING-Armstrong Optra (Bev) White and silhouette grid(B/R)

GUIDE SPECIFICATION FOR ARMSTRONG OPTRA MICROLOOK SOFT FIBRE CEILING WITH ARMSTRONG SILHOUETTE GRID

Providing and fixing in true horizontal level Armstrong OPTRA glass wool microlook edge ceiling tiles of size 600mmx600mmx15mm having NRC 0.90, Light reflectance of >80% (WT), thermal conductivity $k = 0.040 \text{ W/mOK}$, Humidity Resistance of 95% RH, and having Fire Performance CLASS 1 (BS 476). The tile shall have a front facing of white scraped tissue of 180 gsm and 45 gsm formaldehyde free fiber tissue backing and shall be laid on Armstrong Silhouette profile grid system with 15mm white flanges incorporating a 6mm central reveal in white/black colour. Silhouette, Main Runners & Cross Tees to have mitred ends & “birdsmouth” notches to provide mitred cruciform junctions.

INSTALLATION : To comprise main runner spaced at 1200mm centres securely fixed to the structural soffit by approved hangers at 1200mm maximum centre & not more than 150mm from spliced joints. The last hanger at the end of each main runner should not be greater than 600mm from the adjacent wall. 1200mm long cross tees to be interlocked between main runners at 600mm center to form 1200 x 600 mm module. Cut cross tees longer than 600mm require independent support. 600 x 600mm modules to be formed by fitting 600mm long cross tees centrally between the 1200 mm cross tees. The 1200mm cross tees to have central “birdsmouth” notches to facilitate fitting of 600mm cross tees. Perimeter trim to be Armstrong wall angles, secured to walls at 450 mm maximum centres.

2. GYPSUM CEILING

2.1 Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle

hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction.

2.2 fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long drywall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of drywall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification.

2.3 including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in charge but excluding the cost of painting with: 12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- Part I. Rate shall be inclusive of all materials and fixing.

3.0 FLUSH DOOR SHUTTERS

3.1 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 25, 30 or 35 mm.

Thickness and type of shutters shall be as specified.

3.2 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.

3.3 Core

3.3.1 The core of the flush door shutters shall be a 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 45 mm and not more than 75 mm. The width of each wooden strip shall not exceed 30 mm. Stiles, rails and wooden strips forming the core of a shutter shall be of equal and uniform thickness.

4.3.2 Wooden strips shall be parallel to the stiles. 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.

3.4 Face Panel

3.4.1 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 1.0 mm and 3.0 mm. The thickness of the face veneers as such or in the plywood shall be between 0.5 mm and 1.5 mm for commercial veneers and between 0.4 mm and 1.0 mm for CPWD SPECIFICATIONS 2009 322 decorative veneers, provided that the combined thickness of both is not less than 2.2 mm.

3.4.2 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.

3.5 Lipping

4.5.1 Lipping, where specified, shall be provided internally on all edges of the shutters.

4.5.2 Lipping shall be done with battens of first class hardwood or as specified of depth not less than 25 mm. 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.

3.6 Rebating

4.6.1 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.

3.7 Opening for Glazing

3.7.1 When required by the purchaser opening for glazing shall be provided and unless otherwise specified the opening for glazing shall be 250 mm in height and 150 mm or 200 mm in width unless directed otherwise.

3.7.2 The bottom of the opening shall be at a height of 1.4 m from the bottom of the shutter.

3.7.3 Opening for glazing shall be lipped internally with wooden batten of width not less than 25 mm. Opening for glazing shall be provided where specified or shown in the drawing.

3.8 Venetian Opening

Where specified the height of the Venetian opening shall be 350 mm from the bottom of the shutter. The width of the opening shall be as directed but shall provide for a clear space of 75 mm between the edge of the door and venetian opening but in no case the opening shall extend beyond the stiles of the shutter. The top edge of the opening shall be lipped internally with wooden battens of width not less than 25 mm. Venetian opening shall be provided where specified or shown in the drawing.

3.9 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.

3.10 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.

3.11 Tests

Samples of flush door shutters shall be subjected to the following tests:

- (a) End Immersion Test
- (b) Knife Test
- (c) Glue Adhesion Test

One end of each sample shutter shall be tested for End Immersion Test. Two specimens of 150 x 150 mm size shall be cut from the two corners at the other end of each sample shutter for carrying out Glue Adhesion Test. Knife Test shall be done on the remaining portion of each sample shutter.

3.12 Sample Size

Shutters of decorative and non-decorative type from each manufacturer, irrespective of their thickness, shall be grouped separately and each group shall constitute a lot. The number of shutters (sample size) to be selected at random from each lot for testing shall be as specified.

3.13 Measurements

3.13.1 Length and width of the shutters shall be measured to the nearest cm in closed position covering the rebates of the frames but excluding the gap between the shutter and the frame.

3.13.2 Overlap of two shutters shall not be measured. All work shall be measured net as fixed and area calculated in square metres to nearest two places of decimal.

4.13.3 No deduction shall be made for providing venetian opening and opening for glazing.

3.14 Rates

The rate includes the cost of material and labour involved in all the operations described above. Extra rate shall be payable for providing rebates in double leaved shutters. Glazing when provided shall be measured & paid for separately

4.0 WOOD WORK:

4.1 The wood work shall be carried out as per detailed drawings and as directed by the Engineer-in-charge. Timber shall be sawn in the direction of grain. Sawing shall be straight and square. Scantlings shall be accurate planed smooth to full dimensions and rebates, rounding, moulding, shown in the drawing made before the same are framed. Patching or plugging of any kind shall not be permitted. The workmanship shall conform to IS : 4021. Joints shall be simple, neat, close fittings and strong. Joints shall be simple, neat, close fittings and strong, joints shall be fixed with fevicol and after the frames are put together and pressed in position they shall be pinned with hard wood or steel pins. All mortise and tennon joints shall fit in fully and accurately without wedging or filling.

4.2 All wood work shall be approved by the owner before it is painted. All portions of timber abutting against or embedded in masonry or concrete shall be painted with boiling coaltar or solingnun before being placed in the position. Before frames are fixed in positions, these shall be inspected and passed by the Architect. Frames shall be placed in proper position and secured to walls with three M. S. holdfasts, heavy duty on each side of door frames and two on each side for windows. In case of door frames without sills vertical members shall be buried in the floor at least 40 mm deep. The frame without sills shall be provided with temporary wooden bracing to protect them from warping during construction.

4.3 Frames shall be painted with one coat of wood primer & three coats of synthetic enamel paint or polished with French polish as specified. The areas of doors & windows shutters shall be measured to the nearest cm in closed position covering the rebates of the frame but excluding the gap between the shutter and the frame. Overlap of two shutters shall not be measured. All work shall be measured for finished dimensions.

4.4 No allowance shall be made for dimensions supplied beyond those specified.

4.5 Length of each piece shall be measured over

4.6 **Teak Wood Doors & Windows:** Timber used for this work, shall be available second class teakwood of approved quality and as per the sample approved by the Employer / Architect.

4.7 As specified in the item, all the doors shall have teak wood door frame of approved make / quality and size with three numbers hold fasts on each leg of size 300 mm X 40 mm X 5 mm. Teak wood beading / cover moulding will be provided for teak wood frames as required and directed. Teak wood rough grounds will be provided wherever necessary and at no extra cost.

4.8 Hold fasts shall be embedded in the concrete block as shown on drawings or as directed.

4.9 For flush doors, shutters to be used shall be solid core of best approved make and quality with ISI mark, 40 mm thick inclusive teak wood frames as required and directed. Teak wood rough grounds will be provided wherever necessary and at no extra cost.

LIST OF APPROVED MAKE / MATERIALS IN ORDER OF CIVIL/Interior

S.No	Material	Manufacturer/Brand Name
1	Ant-termite Treatment	Chlorpyriphos/ Lindane
2	Premium Acrylic Paint / Primer	Asian / Nerolac / Berger/Dulax
3	White cement putty	J.K / Birla
4	Plastic paint	Royal
5	Water proofing compound	Choksey Chemical / Fosroc/ Dr. Fixit
6	Wall paper	Asian paint or equivalent
7	Aluminium extruded section	Jindal / Hindalco
8	Vitrified tile flooring	Kajaria / Nitco
9	Glazed ceramic tile	Kajaria / Nitco
10	Wooden flooring	Pergo/greenlam
11	Glass	Saint gobin / modi
12	Hardware	Enox / Ozone / Dorma / Hettich
13	Plywood	Century / Greenply / Anchor
14	MDF	Century / Greenply / Anchor
15	Laminate	Merino / Bloom / Royale touchee
16	Glue	Fevicol SH
17	Gypsum	Saint globin-gyproc/ La farge-lady
18	Cement	Birla / ACC/ JK cement
19	G.I sections for partition	Gypsteel
20	Roller blind	Hunter Douglas or equivalent
21	Block board	Century / Anchore
22	Polish	Asian paint/ Berger/ Shalimar
23	Flush Door	Anchor/ Century
24	Door fittings	Godrej / Doorset / Ozone / indobrass/dorma
25	Door closer, floor spring	Everite / Godrej/Ozone
26	White Board	White mark or Equivalent
27	Wash basin, WC pan	Jaquar or equivalent
28	CPVC, PVC Pipe	Finolex/Kasta/Supreme
29	All other materials	As approved by the Architect/ Client







LAYOUT - 26.06.17
J BLOCK - OLD PGP OFFICE

FURNITURE CODING	
01	1200 X 600 MM DESK WITH PEDESTAL
02	900 X 600 MM DESK WITHOUT PEDESTAL
03	4200 X 1200 MM CONFERENCE TABLE
04	900 DIA MEETING TABLE
05	900 X 2100 MM MEETING TABLE
06	STORAGE
07	STORAGE RACKS



Electrical works

1.0 GENERAL

The electrical Installation works shall be carried out in accordance with relevant Indian Standard Code of Practice for Electrical Installation. Electrical Installation work shall also be in conformity with National Electrical Code with up to date amendments. All electrical work shall be carried out in accordance with the provision of Indian electricity Act 1910 & Indian Electricity Rules 1956 amended up to date. The work shall also conform to Indian Standard Code of Practice for the type of work involved. It shall also be in conformity with regulations and requirements of the local electricity Supply Authority and Fire insurance regulations so far as these become applicable to the installation. Electrical work shall be carried out as per following CPWD general Specifications for Electrical works.

Part I - Internal Work - 2013 (amended up to date)

Part IV - Substation Work - 20013 (amended up to date)

Wherever this Tender Specifications call for a higher standard of material and or workmanship than those required by any of the above mentioned regulations and specifications then the technical specifications given hereunder shall take precedence over the said regulations and standards.

2.0 CIRCUITS AND SUBMAIN WIRING

- A) Sub main wiring: Sub main wiring shall mean the wiring from one main/distribution switchboard to another.
- B) Circuit wiring: Circuit wiring shall mean the wiring from the distribution board to the 1st tapping point inside the switch box, from where point wiring starts.
- C) Measurement of circuit and sub main wiring
 - i) Circuit and sub main shall be measured on linear basis along the run of the wiring. The measurement shall include all lengths from end to end of conduit or channel as the case may be exclusive of interconnections inside the switchboard etc. The increase on account of diversion or slackness shall not be included in the measurement.
 - ii) The length of circuit wiring with two wires shall be measured from the distribution board to the nearest switch box from which the point wiring starts.
 - iii) Looping of switch boxes also will be counted towards circuit wiring, measured along the length of conduit / channel.
 - iv) When wires of different circuit are grouped in a single conduit the same shall be measured on linear basis depending on the actual numbers and sizes of wires run.

- v) Protective (loop earthing) conductors, which are run along the circuit wiring and the sub main wiring, shall be measured on linear basis and paid as per BOQ.

Note :- Conduit carrying submain wiring will not carry circuit / point wiring. Similarly Conduit carrying circuit wiring will not carry submain / point wiring. Conduit carrying point wiring will not carry submain / circuit wiring.

OTHER WIRING WORKS

Except as specified above for point wiring, circuit wiring and sub main wiring, other types of wiring shall be measured separately on linear basis along the run of wiring depending on the actual number and sizes of wires run.

2.1 WIRING (LIGHT/ POWER)

- 2.1.1 A point (other than socket outlet point) shall include all work necessary in complete wiring to the following outlets from the controlling switch.
- 2.1.2 Ceiling rose or connector (in the case of points for ceiling / exhaust fan points, prewired light fittings, and call bells).
- 2.1.3 Ceiling rose (in case of pendants except stiff pendants). Back plate (in the case of stiff pendants).
- 2.1.4 Lamp holder (in the case of goose neck type wall brackets, batten holders and fittings which are not prewired).

2.1.2 Scope

Following shall be deemed to be included in point wiring:

- 2.1.2.1 Conduit / channel as the case may be, accessories for the same and wiring cables between the switch box and the point outlet, loop protective earthing of each fan / light fixture.
- 2.1.2.2 Where False ceiling is provided, the point shall be upto the false ceiling level and wiring shall be done upto the point without any joints. Connectors shall be provided at the fitting. Flexible conduit shall be used and couplers shall be provided to connect the rigid conduit with the flexible conduit. Connectors shall be provided at the fitting.
- 2.1.2.3 Loop wiring in rigid / flexible conduit (flexible conduit min 1.6mm thick with couplers). All fixing accessories such as clips, screws, Phil plug, rawl plug etc. as required. Metal or PVC switch boxes for control switches, regulators, sockets etc. recessed or surface type, and phenolic laminated sheet covers over the same. Outlet boxes, junction boxes, pull-through boxes etc. but excluding metal boxes if any, provided with switchboards for loose wire / conduit terminations. Any special block required for neatly housing the connector in batten wiring system. Control switch or MCB, as specified. 3 Pin or 6 Pin socket, ceiling rose or connector as required. (2 Pin and 5 Pin socket outlet shall not be permitted). Connections to ceiling

rose, connector, socket outlet, lamp holder, switch etc. Bushed conduit or porcelain tubing where wiring cables pass through wall etc.

2.1.3 Point wiring for socket outlet points

- (i) The light (6A) point and power (16A) point wiring shall be measured on linear basis, from the respective tapping point of live cable, namely, switch box, another socket outlet point, or the sub distribution board as the case may be, up to the socket outlet.
- (ii) The metal / PVC box with cover; switch / MCB, socket outlet and other accessories shall be measured and paid as a separate item.
- (iii) The power point outlet may be 16A / 6A six pin socket outlet, where so specified in the tender documents.

2.1.4 Group Control Point Wiring

- (i) In the case of points with more than one point controlled by the same switch, such points shall be measured in parts i.e. (a) from the switch to the first point outlet as one point and (b) for the subsequent points, the distance from that outlet to the next one and so on, shall be treated as loop point. For the points in false ceiling, flexible conduiting, couplers, wiring upto the fitting, connectors and loop wiring etc shall also be included in the point.
- (ii) No recovery shall be made for non-provision of more than one switch in such cases.

2.1.5 Twin Control Light Point Wiring

- (i) A light point controlled by two numbers of two way switches shall be measured as two points from the fitting to the switches on either side.
- (ii) No recovery shall be made for non-provision of more than one ceiling rose or connector in such cases.

2.1.6 Multiple Controlled call bell point wiring

- (i) In the case of call bell points with a single call bell outlet, controlled from more than one place, the points shall be measured in parts i.e. (a) from the call bell outlet to one of nearest ceiling roses meant for connection to bell push, treated as one point (b) from that ceiling rose to the next one and so on, shall be treated as separate point.
- (ii) No recovery shall be made for non-provision of more than one ceiling rose or connector for connection to call bell in such cases.

2.2 WIRING SYSTEM

- (i) Wiring shall be done only by the looping system. Phase / live conductors shall be looped at the switch box. For point wiring, neutral wire / earth wire looping for the 1st point shall be done in the switch box; and neutral / earth looping of subsequent points will be made

from point outlets.

- (ii) In wiring, no joints in wiring will be permitted anywhere, except in switch box or point outlets, where jointing or wires will be allowed with use of suitable connector.
- (iii) The wiring throughout the installation shall be such that there is no break in the neutral wire except in the form of linked switchgear.
- (iv) COLOUR CODING

Following colour coding shall be followed in wiring:

Phase	:	Red / Yellow / Blue. (Three phase wiring)
Live	:	Red (Single phase wiring)
Neutral	:	Black
Earth	:	Green.

Termination of circuit into switchboard circuit will consist of phase / neutral / earth wire. Circuit will terminate a switch board (first tapping point, where from point wiring starts) in following manner

Phase wire terminated in phase connector. Neutral wire terminated in neutral connector. Earth wire terminated in earth connector.

The switchboard will have phase neutral and earth terminal connector blocks to receive phase / neutral / earth wire.

2.3 RUN OF WIRING

The type of wiring shall be as specified in the tender documents namely, surface conduit / recessed conduit, steel / PVC, channel.

Surface wiring shall run as far as possible along the walls and ceiling, so as to be easily accessible for inspection.

Above false ceiling, in no case, open wiring shall be allowed. Wiring will be done in recessed conduit or surface steel conduit.

In recessed conduit system, routes of conduit will be planned, so that various inspection boxes provided don't present a shabby look. Such boxes can be provided 5 mm above plaster level, and they can be covered with plaster of paris with marking of junction boxes.

Where number of electrical services like electrical wiring, telephone wiring, computer cabling, pass through corridors, it may be proper to plan such service with properly designed aluminium / PVC channels duly covered by a false ceiling, so that subsequently such service can be maintained and additional cables can be provided.

Generally conduits for wiring will not be taken in floor slabs. When it is unavoidable special precaution to be taken to provide floor channels with provision for safety and maintenance. Alternatively false flooring can be provided.

2.4 THROUGH PASSING WALLS

When wiring cables are to pass through a wall, these shall be taken through a protection (Steel / PVC) pipe or porcelain tube of suitable size such that they pass through in a straight line without twist or cross in them on either end of such holes. The ends of metallic pipe shall be neatly bushed with porcelain, PVC or other approved material.

All floor openings for carrying any wiring shall be suitably sealed after installation.

2.5 JOINTS IN WIRING

2.5.1 No bare conductor in phase and / or neutral or twisted joints in phase, neutral, and / or protective conductors in wiring shall be permitted.

2.5.2 There shall be no joints in the through-runs of cables. If the length of final circuit or sub main is more than the length of a standard coil, thus necessitating a through joint, such joints shall be made by means of approved mechanical connectors in suitable junction boxes.

2.5.3 Termination of multistranded conductors shall be done using suitable crimping type thimbles.

2.6 RATINGS OF OUTLETS

2.6.1 Incandescent lamps in residential and non-residential buildings shall be rated at 60 W and 100 W respectively.

2.6.2 Ceiling fans shall be rated at 80 W. Exhaust fans, fluorescent tubes, compact florescent tubes, HPMV lamps, HPSV lamps etc, shall be rated according to their capacity. Control gear loses shall be also considered as applicable.

2.6.3 6A and 16A socket outlet points shall be rated at 100 W and 500 W respectively, unless the actual values of loads are specified.

3.0 CAPACITY OF CIRCUITS

3.1 Lighting circuit shall feed light / fan / call bell points. Each circuit shall not have more than 800 Watt connected load or more than 10 points. However in case of CFL points where load per point may be less, number of points may be suitably increased.

3.2 Power circuit in non-residential building will have only one outlet per circuit.

3.3 Load more than 1 KW shall be controlled by suitably rated MCB and cable size shall be decided as per calculations.

4 SOCKET OUTELTS

- 4.0 Socket outlets shall be 6A 3 Pin, 16A 3 Pin or 16 / 6 Amp 6 Pin. The third pin shall be connected to earth through protective conductor (loop-earthing). 2 Pin or 5 Pin sockets are not permitted.
- 4.1 Connecting conductors of electrical appliances with socket outlets shall be of flexible type with an earthing conductor for connection to the earth terminal of plug and the metallic body of the electrical appliance.
- 4.2 Sockets for the power outlets of rating above 1 KW shall be of industrial type with associated plug top and controlling MCB.
- 4.3 Shutter type (interlocking type) of sockets shall be used unless otherwise specified.
- 4.4 Every socket outlet shall be controlled by a switch or MCB, as specified. The control switch / MCB shall be connected on the 'live' side of the line.
- 4.5 Unless and otherwise specified, the control switches for the 6A and 16A socket outlets shall be kept along with the socket outlets.

5 CABLES

Copper conductor cable will be used for sub main / circuit / point wiring or as specified in BOQ

Multi-strand flexible FR sheathed copper conductor shall be used for sub main/circuit/point wiring.

Minimum size of wiring:

Light Point Wiring: 1.5 / 2.5 Sq.mm (As Per BOQ)

Power Point Wiring: 2.5 Sq.mm

Power wiring for Hand Drier and AC: 4.0 Sq.mm

Power circuit wiring more than 1 KW wire size shall be as per calculation.

Insulation: Copper conductor wire shall be multi stranded PVC insulated, Fire retardant, (FR) type.

6.0 WIRING ACCESSORIES

6.1 Control Switches for Point:

- a. Control switches (single pole switch) carrying not more than 16A shall be modular type. The switch shall be 'On' when the knob is down.
- b. Modular type switches of reputed make along with matching mounting boxes shall be used in non-residential buildings and residential quarters of all types. Modular type sockets, stepped type fan regulators shall be used. All such boxes, switches and accessories shall be of same make of modular switch manufacturer.

- c. It is recommended to provide double pole MCB in proper enclosure as power outlet for window type AC units, geysers etc.

6.2 Switch Box:

Switch box shall be hot dip galvanized, factory fabricated suitable in size for Surface / recess mounting and size for accommodating the required number of switches and accessories (where required to be used for applications other than modular switches / sockets).

6.3 Switch Box Covers (for application other than modular type):

Phenolic laminated sheets of approved shade shall be used for switch box covers. These shall be of 3 mm thick synthetic phenolic resin bonded laminated sheet as base material and conforming to grade P-1 of IS: 2036-1974.

7.0 Ceiling Rose:

7.1 A ceiling rose shall not be used on a circuit, the voltage of which normally exceeds 250 Volt.

7.2 Only one flexible cord shall be connected to a ceiling rose. Specially designed ceiling roses shall be used for multiple pendants.

a A ceiling rose shall not embody fuse terminal as an integral part of it.

8.0 Lamp Holders:

8.1 Lamp holders may be batten, angle, and pendant or bracket holder type as required. The holder shall be made of brass and shall be rigid enough to maintain shape on application of a nominal external pressure. There should be sufficient threading for fixing the base to the lamp holder part so that they do not open out in handling the lamp or shade.

8.2 Lamp holders for use on brackets and the like shall have not less than 1.3 cm nipple and all those for use with flexible pendant shall be provided with cord grips.

9.0 ATTACHMENT OF FITTINGS AND ACCESSORIES:

Conduit Wiring System:

9.1 All accessories like switches, socket outlets, call bell pushes and regulators shall be fixed in flush pattern inside the switch / regulator boxes. Accessories like ceiling roses, brackets, batten holders etc. shall be fixed on outlet boxes. The fan regulators may also be fixed on outlet boxes, if so directed by the Engineer-in-charge.

9.2 Aluminium alloy or cadmium plated iron screws shall be used to fix the

accessories to their bases.

- 9.3 The switch box / regulator box shall normally be mounted with their bottom 1.25 m from floor level, unless otherwise directed by the Engineer-in-charge.

10.0 MARKING OF SWITCH BOARDS:

10.1 Schematic Diagram:

First a comprehensive schematic diagram for each Building/ Block is to be prepared, starting from Main LT Panel, rising main, sub Distribution Boards, DBs, etc. and the manner in which they are connected. This will include essential, non-essential and UPS systems. Sizes of interconnecting main / sub main cables shall be indicated.

10.2 Marking of each Main Board

Each main board / sub Distribution Board shall be marked indicating rating of each incoming / outgoing switch, Load fed by it. Size of incoming and outgoing cables also shall be marked indicating from where the incoming cable has originated.

10.3 Marking of Distribution Board

Each Distribution Board shall be marked indicating detail of incoming switch (ACB, MCCB, or MCB /ISOLATOR.). Size of incoming cable from where it is fed and each outgoing MCB indicating the area fed. It shall be suitably marked Suitable marking sticker will be fixed to indicate such details.

11.0 METALLIC CONDUIT WIRING SYSTEM

11.1 Conduits

- 11.1.1 All rigid conduit pipes shall be of steel and ISI marked. The wall thickness shall be not less than 1.6 mm (16 SWG) for conduits up to 32 mm dia and not less than 2 mm (14 SWG) for conduits above 32 mm dia. These shall be solid drawn or seamed by welding, and finished with galvanized or stove enameled surface.

- 11.1.2 The maximum number of PVC insulated cables conforming to IS: 694-1990 that can be drawn in one conduit is given in table I, and the number of cables per conduit shall not be exceeded. Conduit sizes shall be selected according to in number of runs wires and its size.

- 11.1.3 No steel conduit less than 20 mm in diameter shall be used.

11.2 Conduit Accessories

- 11.2.1 The conduit wiring system shall be complete in all respects, including their accessories.

- 11.2.2 All conduit accessories shall be of threaded type, and under no circumstances pin grip type or clamp grip type accessories shall be used.
- 11.2.3 Bends, couplers etc. shall be solid type in recessed type of works and may be solid or inspection type as required, in surface type of works.
- 11.2.4 (a) Saddles for surface conduit work on wall shall not be less than 0.55 mm (24 gauges) for conduits up to 25 mm dia and not less than 0.9 mm (20 gauges) for larger diameter. The corresponding widths shall be 19 mm and 25 mm.
- 11.2.4.1 The minimum width and the thickness of girder clips used for fixing conduits to steel joists, and clamps shall be as per Table II.

11.3 Outlets

- 11.3.1 The switch box or regulator box shall be made of metal on all sides, except on the front. In the case of CI boxes, the wall thickness shall be at least 3 mm and in case of welded mild steel sheet boxes, the wall thickness shall not be less than 1.2 mm (18 gauge. for boxes up to a size of 20 cm x 30 cm, and above this size 1.6 mm (16 gauge) thick MS boxes shall be used. The metallic boxes shall be painted with anticorrosive paint before erection.
- 11.3.2 Outlet boxes shall be of one of the size, covered in the Schedule of Rates (Electrical), Part - I Internal 2007 or as per manufacturer of modular switch/ socket to be used.
- 11.3.3 Where a large number of control switches and / or fan regulators are required to be installed at one place, these shall be installed in more than one outlet box adjacent to each other for ease of maintenance.
- 11.3.4 An earth terminal with stud, 2 metal washers and terminal block shall be provided in each MS box for termination of protective conductors and for connection to socket outlet / metallic body of fan regulator etc.
- 11.3.5 A metal strip shall be welded / screwed, to the metal box to support tumbler type of control switches, sockets and / or fan regulators in flush pattern wherever required.
- 11.3.6 Clear depth of the box shall not be less than 60 mm and this shall be increased suitably to accommodate mounting of fan regulators in flush pattern.
- 11.3.7 The fan regulators can also be mounted on the switch box covers, if so stipulated or directed by the Engineer-in-charge.
- 11.3.8 Except where otherwise stated, 3 mm thick phenolic laminated sheets. Shall be fixed on the front with brass screws, or aluminium alloy / cadmium plated iron screws as approved by the Engineer-in-charge.

12.0 INSTALLATION

Common aspects for recessed and surface conduit works.

12.1 Conduit Joints

- 12.1.1 The conduit work of each circuit or section shall be complete before the cables are drawn in.
- 12.1.2 Conduit pipes shall be jointed by means of screwed couplers and screwed accessories only. Threads on conduit pipes in all cases shall be between 13 mm to 19 mm long, sufficient to accommodate pipes to full threaded portion of couplers or accessories.
- 12.1.3 Cut ends of conduit pipes shall have not sharp edges, nor any burrs left to avoid damage to the insulation of the conductors while pulling them through such pipes.
- 12.1.4 In order to ensure that the above provision has been carried out, separate lengths of conduit etc., after they have been prepared, shall be submitted to Engineer-in- Charge for inspection before being fixed.
- 12.1.5 No bare threaded portion of conduit pipe shall be allowed, unless such bare threaded portion is treated with anticorrosive preservative or covered with approved plastic compound.

12.2 Bends in Conduit

- 12.2.1 All necessary bends in the system, including diversion, shall be done either by neatly bending the pipes without cracking with a bending radius of not less than 7.5 cm, or alternatively, by inserting suitable solid or inspection type normal bends, elbows or similar fittings, or by fixing cast iron inspection boxes, whichever is most suitable.
- 12.2.2 No length of conduit shall have more than the equivalent of four quarter bends from outlet to outlet.
- 12.2.3 Conduit fittings shall be avoided as far as possible exposed to weather. Where necessary, solid type fittings shall be used.

12.3 Outlets

- 12.3.1 All outlets such as switches, wall sockets etc. may be either flush mounting type, or have surface mounting type unless otherwise specified or directed by Engineer- in Charge.
- 12.3.2 Painting after erection After installation, all accessible surfaces of conduit pipes, fittings, switch and regulator boxes etc. shall be painted.

12.4 Additional requirements for surface conduit work.

12.5 Painting before erection.

The outer surface of conduit including all bends, unions, tees, junction boxes etc. forming part of the conduit system, shall be adequately protected against rust when such system is exposed to weather, by being painted with 2 coats of

red oxide paint applied before they are fixed.

12.6 Fixing conduit on surface.

12.6.1 Conduit pipes shall be fixed by saddles, secured to suitable approved plugs with screws in an approved manner at an interval of not more than one meter, but on either side of the couplers or bends or similar fittings, saddles shall be fixed at a distance of 30 cm from the center of such fittings.

12.6.2 Where conduit pipes are to be laid along the trusses, steel joists etc. the same shall be secured by means of saddles or girder clips or clamps as required by the Engineer-in-charge.

12.6.3 In long distance straight run of conduit, inspection type couplers at reasonable intervals shall be provided, or running threads with couplers and jam nuts shall be provided.

12.7 Fixing outlet boxes.

Only portion of the switch box shall be sunk in the wall, the other portion being projected out for suitable entry of conduit pipes into the box.

13.0 ADDITIONAL REQUIREMENTS FOR RECESSED CONDUIT WORK

- Making Chase
- The chase in the wall shall be neatly made and of ample dimensions to permit the conduit to be fixed in the manner desired.
- In the case of buildings under construction, the conduits shall be buried in the wall before plastering, and shall be finished neatly after erection of conduit.
- In case of exposed brick / rubber masonry work, special care shall be taken to fix conduit and accessories in position along with the building work.

(ii) Fixing conduits in chase

(a) The conduit pipe shall be fixed by means of staples, J-hooks, or by means of saddles, not more than 60 cm apart or by any other approved means of fixing.

(b) All threaded joints of conduit pipes shall be treated with some approved preservative compound to secure protection against rust.

1.2 Fixing conduits in RCC work

The conduit pipes shall be laid in position and fixed to the steel

reinforcement bars by steel binding wires before the concreting is done. The conduit pipes shall be fixed firmly to the steel reinforcement bars to avoid their dislocation during pouring of cement concrete and subsequent tamping of the same.

Fixing of standard bends or elbows shall be avoided as far as practicable, and all curves shall be maintained by bending the conduit pipe itself with a long radius, which will permit easy drawing in of conductors

14.0 SUBMAIN WIRING

Mains and sub-main cable/wire shall be of the rated capacity and approved make. Every main and sub-main shall be drawn into an independent adequate size conduit. Draw boxes of adequate size shall be provided at convenient locations to facilitate easy drawings of the sub-main and main cables/wires. An independent earth wire of proper rating shall be provided for every sub-main. Single-phase sub main shall have single earth wire whereas three-phase sub main shall be provided with two earth wires. Earth wire shall be bare copper conductor.

Where mains and sub-mains cables are connected to switchgear, sufficient extra lengths of sub mains cable shall be provided to facilitate easy connections and maintenance. For termination of cables crimping type cable socket / lugs shall be provided. Same colour code as for circuit wiring shall be followed.

15.0 LOAD BALANCING

Balancing of circuits in three-phase installation shall be planned before the commencement of wiring and shall be strictly adhered to.

16.0 COLOUR CODE FOR CIRCUIT & SUBMAIN WIRING

Colour code for circuit & sub main wiring installation shall be Red, Yellow and Blue for three phases.& Black for neutral .

17.0 UNDER FLOOR METAL DUCTING & CROSS OVER BOXES, VERTICAL ACCESS UNIT.

The under floor ducting system shall be suitable for the distribution of power, voice and data cabling as per the distribution scheme in the layout drawings. Under floor ducting shall be complete with all accessories required to complete the installation.

18.0 METAL DUCTING

Under floor ducting shall be of rectangular shape may be of single or triple compartment according to requirement. One compartment shall be used for raw power wiring second for UPS / power wiring. Separate floor ducting/raceway shall be laid for voice / data wiring 300 mm away from floor ducting /raceway of power wiring. Under floor ducting shall be made of pre-galvanized steel of minimum 1.6 mm thickness. The top and bottom plates of the duct shall be double folded and spot-welded together to full height of the ducting to give required strength. Metal

jointing sleeves with locking screws shall be provided for grounding.

19.0 CROSS OVER BOX

The cross over boxes shall be made of high tensile strength, pressure injection zinc alloy materials. Crossover box shall be riveted into a 1.6 mm thickness pre-galvanized sheet steel base plate. Crossover box shall be provided with earth connector.

20.0 VERTICAL ACCESS UNIT

The vertical access unit shall be L - Shaped for carrying of cables from under floor to surface of wall or in partition / modular furniture and shall be triple compartment. Vertical access unit shall be of same finish and material as of under floor ducting.

Maximum number of PVC insulated 650 / 1100 V grade copper conductor cable/wires conforming to IS: 694 - 1990 that can be drawn in various sizes of conduit is given in the table appended below.

Nominal cross-sectional area of conductor in Sq.mm	20 mm		25 mm		32 mm		38 mm		51 mm		64 mm	
	S	B	S	B	S	B	S	B	S	B	S	B
1	2	3	4	5	6	7	8	9	10	11	12	13
1.50	5	4	10	8	18	12	-	-	-	-	-	-
2.50	5	3	8	6	12	10	-	-	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-	-	-
16	-	-	2	2	3	3	6	5	10	7	12	8
25	-	-	-	-	3	2	5	3	8	6	9	7
35	-	-	-	-	-	-	3	2	6	5	8	6
50	-	-	-	-	-	-	-	-	5	3	6	5
70	-	-	-	-	-	-	-	-	4	3	5	4

NOTE:

The above table shows the maximum capacity of conduits for a simultaneous drawing in of cables.

The columns headed 'S' apply to runs of conduits which have distance not exceeding 4.25 meters between draw in boxes and which do not deflect from the straight by an

angle or more than 15 degrees. The columns headed 'B' apply to runs of conduit, which deflect from the straight by an angle of more than 15 degrees. IRING (TELEPHONE)

20.1 All concealed / surface installation including the conduit run above the false ceiling space shall be heavy gauge black enameled MS unless otherwise specified and directed by Engineer -in Charge. The Make & specification for materials & installation shall be same as described .All relevant clauses shall be applicable for telephone system as applicable. The conduit for telephone system shall be laid minimum 300 mm away from the power conduit. Care shall be taken that telephone conduits are not laid in close proximity of electrical conduits. Wherever telephone conduits cross power conduits, they shall be at right angle, to each other. All telephone conduits shall be earthed.

<u>Size of Cable</u>	<u>Conduit Size</u>
Up to 5 pair single cable	25 mm
Above 5 pair up to 10 pair single cable	32 mm
Above 10 pair up to 20 pair single cable	32 mm
2 Nos. 2 pair	25 mm
3 to 5 Nos. 2 pair	32 mm
6 to 10 Nos. 2 pair cable	32 mm

The size of conduit shall depend upon no of wires to be drawn. However minimum size of conduits shall be 25 mm.

All telephone wires shall be 0.60 mm diameter annealed tinned copper conductor PVC insulated and PVC sheathed cables. All telephone cables inside the building shall be unarmored & each outlet shall be wired with 2 pair cables from tag-Block unless otherwise specified separately. From main tag block to sub tag block cabling shall be done with suitable size of telephone-unarmored cable in conduit / pipe / cable trays. Telephone cables from MDF/ Tag Block to Tag Block passing through open area shall be armoured cable laid underground as per specification.

20.2 All concealed boxes and wiring accessories shall be of G.I as described in the electrical wiring section shall be used for telephone wiring also. The boxes/main junction box shall be suitable for wall mounting having opening for cable/conduit entry. All PVC cable shall enter the telephone junction box from the bottom through brass cable glands and enough cable length shall be available for termination. Each PVC cable serving the telephone socket shall be marked for identification.

Junction boxes shall be fully enclosed, kept tight with lockable-hinged doors. Boxes shall be zinc anodized type & it make as of socket /outlets.

Prior to the system installation the contractor shall consult telephone department/ service provider for their requirements and notify the Engineer-

in-Charge. All equipments like tag blocks wires shall be as per approved makes.

20.3 SUPPLY OF MATERIALS: Exclusions:

- a) Telephone Exchange & Telephone instruments
- b) Main incoming cable.

Rest all material for distribution of telephone system as covered on BOQ shall be in the Contractors scope.

The telephone outlet shall be plug-in (clip on) type socket outlet. The switch plate shall be similar to the electrical wiring devices.

21.0 L.T. CABLES

21.1 GENERAL

L.T. Cables shall be supplied, inspected, laid tested and commissioned in accordance with drawings, specifications, relevant Indian Standards specifications and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written on the drums. The recommendations of the cable manufacturer with regard to jointing and sealing shall be strictly followed.

21.2 MATERIALS

The L.T. Power cables shall be XLPE insulated PVC sheathed type aluminium conductor armoured cable conforming to IS: 7098: 1988 (Part-I) with up to date amendments where as control cable shall be XLPE insulated and PVC sheathed copper conductor armoured / unarmored cable conforming to IS: 7098: 1988 (Part - IS: 1554 Part II with upto date amendment for PVC insulated cables.

22.3 CABLE LAYING

Cables shall be laid directly in ground, pipes, masonry ducts, on cable tray, surface of wall / ceiling etc. as indicated on drawings and / or per the direction of Engineer-in-Charge or as per Category list attached as Annexure-4. Cable laying shall be carried out as per CPWD specifications.

22.4 INSPECTION

All cables shall be inspected as per IS Specified.

22.5 JOINTS IN CABLES

The Contractor shall take care to see that the cables received at site are apportioned to various locations in such a manner as to ensure maximum utilization and avoiding of cable joints. This apportioning shall be got approved from Project

Manager before the cables are cut to lengths.

22.6 LAYING CABLES IN GROUND

Cables shall be laid by skilled experienced workmen as per CPWD specifications.

22.7 PROTECTION OF CABLES

The cables shall be protected as per CPWD specifications

22.8 EXCAVATION & BACK FILL

All excavation and back fill required for the installation of the cables shall be carried out by the Contractor in accordance with the drawings and requirements laid down elsewhere. Trenches shall be dug true to line and grades. Back fill for trenches shall be filled in layer not exceeding 150 mm. each layer shall be properly rammed and consolidated before laying the next layer.

The Contractor shall restore all surfaces, roadways, sidewalks, Krebs wall or the works cut by excavation to their original condition to the satisfaction of the Engineer-in-Charge.

22.9 LAYING OF CABLES ON CABLE TRAY/SURFACE OF WALL/CEILING

Cable shall be laid on perforated M.S. Cable tray. Cables shall be properly dressed before cable ties / clamps are fixed. Wherever cable tray is not proposed, cables shall be fixed on surface of wall or ceiling slab by suitable MS clamps / saddles. Care shall be taken to avoid crossing of cable.

22.10 CABLES ON HANGERS ON RACKS

The Contractor shall provide and install all iron hangers racks or racks with die cast cleats with all fixings, rag bolts or girder clamps or other specialist fixing as required.

Where hangers or racks are to be fixed to wall sides, ceiling and other concrete structures, the Contractor shall be responsible for cutting away, fixing and grouting in rag bolts and making good.

22.11 CABLES TAGS

Cable tags shall be made out of 2 mm thick aluminium sheets, each tag 1-1/2 inch in dia with on hole of 2.5 mm dia, 6 mm below the periphery. Cable designations are to be punched with letter / number punches and the tags are to be tied inside the panels beyond the glanding as well as below the glands at cable entries. Trays tags are to be tied at all bends. On straight lengths, tags shall be provided at every 5 meters.

22.12 TESTING OF CABLES

Prior to installation, burying of cables, following tests shall be carried out. Insulation test between phases, phase & neutral, phase & earth for each length of cable.

Before laying.
After laying.
After jointing.

On completion of cable laying work, the following tests shall be conducted in the presence of the Engineer-in Charge.

- a. Insulation Resistance Test (Sectional and overall).
- b. Continuity Resistance Test.
- c. Earth Test.

All tests shall be carried out in accordance with relevant Indian Standard code of practice and Indian Electricity Rules. The Contractor shall provide necessary instruments, equipments and labour for conducting the above tests & shall bear all expenses of conducting such tests.

22.13 CABLE TERMINATION

Cable termination shall be done in terminal box or cable end box or distribution boards, or apparatus/equipments. Terminations are to be made with mechanical gland and of the tinned nickel plated, anti-corrosive, three piece improved pattern, which is to grip inner and outer PVC sheaths as well as the armour of the cable. The cable ends or the core conductor are to be connected by solder less lugs or sockets using crimping tool of approved make for all cables.

- i) All underground cables and cable joints shall be marked on the surface by markers generally manufactured and tested to requirements of relevant ISS. Approved CI cable markers shall be provided at every 30m along the route of the cables and at both ends of road crossing, indicating cable joints and cables as applicable. Special CI markers shall be provided at all buried cable joints indicating "Electrical Cable Joints". CI plates duly engraved with the size of the cable and the place it serves shall be tied to the cable at regular intervals of 5m for easy identification of cables.
- ii) Cable tags shall be made out of 2 mm thick aluminium sheets, each tag 32 mm dia with one hole of 2.5 mm dia. 6 mm below the periphery shall be provided for clamping the same with cables.

Cable designation is to be punched with letter/number punches and the tags are to be tied to cables with piano wires of approved quality and size. Tags

23.0 DISTRIBUTION BOARDS

Distribution Board shall be double door type with extended loose wire box at the top and suitable for flush installation. All distribution boards shall be of three phases (415 Volts) or single phase (240 Volts) type with incoming isolator or MCB and / or ELCB as in Schedule of quantities. Distribution boards shall contain plug in or bolted type miniature circuit breaker mounted on bus bars. Miniature circuit breakers shall be quick make and quick break type with trip free mechanism. MCB shall have

thermal and magnetic short circuit protection. MCB shall conform to IS 8828 - 1978, IEC - 898. Bus bars shall be of electrolytic copper. Neutral bus bars shall be provided with the same number of terminals, as there are single ways on the board, in addition to the terminals for incoming mains. An earth bar of similar size as the neutral bar shall also be provided. Phase barrier shall be fitted and all live parts shall be screened from the front. Ample clearance shall be provided between all live metal and the earth case and adequate space for all incoming and outgoing cables. All distribution board enclosures shall be powder coated. A circuit identification card in clear plastic cover shall be provided for each distribution board.

Distribution Board with single-phase outgoing requirements shall be Horizontal type. Distribution Board with three-phase outgoing requirements shall be Vertical type including Per Phase Isolation kit. Distribution Board installed in indoor dry locations shall conform to IP - 42. Distribution Board installed in outdoor and wet locations shall conform to IP - 65.

Miniature Circuit Breakers for lighting circuits shall be of "C" Curve, whereas the circuits feeding discharge lamps (SON-T, HPMV or HPSV) halogen lamps, all power outlet points, equipment / machinery shall be of "D" Curve types. All miniature circuit breakers shall be of 10 KA rated rupturing capacity.

Distribution board shall be provided with Isolator MCB type / MCB / earth leakage circuit breaker as mentioned in drawings and BOQ. Earth leakage circuit breaker shall be current operated type and of sensitivity not less than 300 mA unless otherwise stated. RCBO / RCCB shall be mounted within distribution board box for single-phase distribution board while in three-phase distribution board RCBO / RCCB shall also be mounted within distribution board. Distribution board, Isolator / RCCB / RCBO's and MCB's used shall be of same manufacturer. Standard size DB box manufactured by approved manufacturer shall be used. In case size specified in BOQ is not standard size of manufacturer, in that case next standard size distribution board box shall be used with incoming and outgoing MCB as specified in BOQ. Additional cutout / space for outgoing MCB shall be plugged with blank plates.

Other specification shall be similar to LT Panel under para10

24.0 POWER OUTLETS

Power outlets shall house the required size of MCB/MCCB in metallic enclosure. It shall also have the provision for termination of incoming & outgoing cables. Other relevant paras of 11 & 12 shall apply.

25.0 LIGHT FIXTURES

25.1 SCOPE:

Scope of work under this section shall include supply inspection / testing at suppliers / manufacturers premises at site, receiving at site, safe storage, transportation from point of storage to point of erection, erection and commissioning of light fittings, fixtures and accessories for back of the house area including all necessary supports, brackets, down rods and painting etc. as required.

25.2 STANDARDS:

The lighting and their associated accessories such as lamps, reflectors, housings, ballasts etc., shall comply with the latest applicable standards, more specifically the following:

Electric light fittings General and Safety requirements	IS - 1913
Industrial lighting fittings with metal reflectors-	IS - 1777
Decorative lighting outposts-	IS - 5077
Flood lights	IS - 10322
	(Part-5, Section 5)
Luminaries for street lighting	IS - 10322
Bayonet lamp holders	IS - 1258
Bi-pin lamp holders for tubular- fluorescent lamps	IS - 3323
Ballasts for use in fluorescent light fittings	IS - 1534
Starters for fluorescent lamp	IS - 2215
Ballast for HP MV lamps	IS - 6616
Capacitors for use in fluorescent, HPMV & LP	
Sodium Vapour lamps circuits	IS - 1569
Tubular Fluorescent lamps	IS - 2418
High pressure mercury vapour lamps	IS - 9900
Tungsten filament general electric lamps	IS - 418

25.3 LIGHT FITTINGS-GENERAL REQUIREMENTS

- a) Fittings shall be designed for continuous trouble free operation under atmospheric conditions without reduction in lamp life or without deterioration of materials and internal wiring. Outdoor fittings shall be weather-proof and rain proof.
- b) Fittings shall be so designed as to facilitate easy maintenance including cleaning, replacement of lamps / starters etc.
- c) All fittings shall be supplied complete with lamps. All mercury vapour and sodium vapour lamp fittings shall be complete with accessories like ballasts, power factor improvement capacitors, starters, etc. Outdoor type fittings shall be provided weather proof boxes.
- d) Fluorescent lamp fittings shall be complete with all accessories like ballasts, power factor improvement capacitors, starter's capacitors for correction of stroboscopic effect.
- e) Each fitting shall have a terminal block suitable for loop out connection by 1100V PVC insulated copper conductor wires up to 4 Sq.mm. the internal wiring should be completed by the manufacturer by means of standard copper wire and terminated on the terminal block.

- f) All hardwares used in the fitting shall be suitably plated or anodized and passivated.
- g) Earthing Each lighting fitting shall be provided with an earthing terminal. All metal or metal enclosed parts of the housing shall be bonded and connected to the earthing terminal so as to ensure satisfactory earthing continuity throughout the fixture.
- h) Painting/Finish All surfaces of the fittings shall be thoroughly cleaned and degreased and the fittings shall be free from scale, rust, sharp-edges, and burrs.
- i) The housing shall be stove-enamelled or anodized as required. The surface shall be scratch resistant and shall show no sign of cracking or flaking when bent through 90 deg. over 12 mm dia mandrel.

Decorative Type Fittings:

Decorative fluorescent fittings shall be provided with mounting / housing channel cum reflectors of CRCA sheet steel. Stove enamelled diffusers or, louvers shall be translucent white polystyrene.

Accessories for Light Fittings Reflectors:

The reflectors shall be made of CRCA sheet steel / aluminium / silvered glass / Chromium plated sheet copper as required. The thickness of reflectors shall be as per relevant standards. Reflectors made of steel shall have stove enamelled/epoxy coating finish. Aluminium used for reflectors shall be anodized/epoxy stove enamelled / mirror polished. The finish for the reflector shall be as specified. The reflectors shall be free from scratches / blisters and shall have a smooth and glossy surface having optimum light reflecting coefficient. Reflectors shall be readily removable from the housing for cleaning and maintenance without use of tools.

Lamp/Starters Holders:

Lamp holders shall have low contact resistance and shall be resistant to wear. They shall hold lamps in position under normal conditions of shock and vibration prevalent in an industrial atmosphere.

Lamp holders for fluorescent lamps shall be of spring loaded bi-pin roar type. Live parts of the lamp shall not be exposed during insertion of removal of the lamp or after the lamp has been taken out.

Lamp holders for incandescent and mercury vapour lamps shall be bayonet type up to 100 W and Edison screw type for higher wattages.

Starter holders for fluorescent lamps shall be so designed that they are mechanically robust and shall be capable of withstanding shocks during transit, installation and use.

Ballasts:

The ballasts shall be designed for long life and low power loss. They shall be mounted using self-locking, anti-vibration fixtures and shall be easy to remove without dismantling the fittings. The enclosures shall be dust tight and non-combustible.

Ballasts shall be inductive, heavy duty type, filled with thermosetting, insulating, moisture repellent polyester compound filled under pressure or vacuum. Ballasts shall be provided with taps to set the voltage. The ballast wiring shall be of copper and they shall be free from dust.

Separate ballast shall be provided in case of multi lamp fittings, except in case of 2 x 20 W fittings.

Starters:

Starters shall have bi-metal electrodes and high mechanical strength. Starters shall be replaceable without disturbing the reflector of lamps and without use of any tool. Starters shall have brass contacts and radio interference capacitor.

Capacitors:

The capacitors shall have a constant value of capacitance and shall be connected across the supply of individual lamp circuits.

The capacitor shall have a value of capacitance so as to correct the power factor of its corresponding lamps circuit to 0.95 lag or better. Capacitor shall be hermetically sealed preferably in a metal enclosure to prevent seepage of impregnant and ingress of moisture.

Lamps:

Incandescent lamps shall be clear type unless otherwise specified. Fluorescent lamps shall be "day-light colour" type unless otherwise specified and shall be provided with features to avoid blackening of lamp ends.

ALL lamps shall be colour corrected type.

Lamps shall be capable of withstanding vibrations prevalent in an atmosphere and connection at bend in wires and filament / electrodes shall not break under such circumstances.

PL lamps shall be energy effective compact single ended light sources in 9 to 11W ratings consisting of two narrow glass tubes welded together.

The lamp shall be complete with integral glow switch starter and capacitor and two pin electrical connections.

The lamp shall be colour rendered to give warm colour impression.

The lamp shall have a long life and shall be energy efficient.

INSTALLATION:

The light fixtures and fittings shall be assembled and installed in position complete and ready for service, in accordance with details, drawings, manufacturer's instructions and to the satisfaction of the construction manager / consultants. Pendant fixtures specified with overall stem lengths are subject to change and shall be checked with conditions on the job and installed as directed. All suspended fixtures shall be mounted rigid and fixed in position in accordance with drawings, instruction and to the approval of the construction manager / consultants. Fixtures shall be suspended true to alignment, plumb level and capable of resisting all lateral and vertical forces and shall be fixed as required.

All suspended light fixtures, fans etc, shall be provided with concealed suspension arrangement in the concrete slab / roof members. It is the duty of the contractor to make these provisions at the appropriate stage of construction. Exhaust fans shall be fixed at location shown on drawings. They shall be wired to a plug socket outlet at a convenient location near the fan. All switch and outlet boxes, for fans and light fittings shall be bonded to earth. The recessed type fixtures shall not be supported into the false ceiling frame work. This shall have independent from the socket of ceiling using conduit down rods / steel chain with provision for adjusting the level of fitting. Wires shall be connected to all fixtures through connector blocks. Wires brought out from junction boxes shall be encased in flexible pipes for connecting fixtures concealed in suspended ceiling. The flexible pipes shall be check-nut to the junction box with a brass bush. Double check nut at the fixture and flexible pipes, wherever used shall be of make and quality approved by the engineer in-charge.

26.0 EARTHING

GENERAL: All the non-current metal parts of electrical installation shall be earthed properly. All metal conduits, MDB / SDB, distribution boards, switch boxes, outlet boxes, and all other parts and switchgear made of metal shall be bonded together and connected by means of specified earthing conductors to an efficient earthing system. Earthing work shall conform to CPWD General Specifications for Electrical Works (Part - I - Internal) 1994 and Indian standard specification IS: 3043 - 1987 and relevant Indian Electricity Rules 1956 amended upto date and in the regulations of the local Electricity Supply Authority.

EARTHING CONDUCTOR: All lights, fans, 6 Amp plug points (Lighting circuit) shall be earth with 2.5 Sq.mm PVC insulated copper conductor. All 16 Amp power socket shall be earthed with 4 Sq.mm PVC insulated copper conductor wire unless otherwise specified by Engineer-in-Charge. From Sub Distribution Boards to distribution boards, earth continuity conductor shall be minimum of 4 Sqmm copper wires or more according to load. . Single-phase distribution board shall have one earth continuity conductor and three-phase distribution board shall be provided with two earth continuity conductors. Earthing of MDB / SDB shall be with 25 x 5 mm G.I strip L.T

panel shall be earthed with 25 x 5 mm G.I strip. Earth conductor laid in ground shall be protected for mechanical injury and corrosion by providing GI pipe of 40 mm diameter. All metal supports / frame work for false floor, cable trays, under floor M.S. ducts / cross over junction boxes shall also be earthed.

27.0 FIRE SAFETY EQUIPMENTS & ACCESSORIES

- 27.1 Rubber or insulating mat shall be provided in front of main switchboards and any other control equipments of medium voltage. Standard first aid box containing material as prescribed by St. John Ambulance Brigade or Indian Red Cross should be provided in each sub station, enquiry office and important installations and should be readily available.
- 27.2 shock treatment chart (One in English and another one in regional language) displaying method of giving artificial respiration to a recipient of electric shock should be prominently displayed at appropriate places.
- 27.3 Fire Extinguishers (DCP/ CO2 Gas type) & fire buckets in substation shall be installed inside/outside rooms near transformers and LT panels.

28.0 Technical Specifications for Fire Alarm System

GENERAL AND SCOPE OF WORK

GENERAL

This tender specification covers the details for Automatic Fire Detection and Alarm System envisaged in each terminal to facilitate automatic detection of fire in the incipient stage and its annunciation, so as to prevent the spread.

SCOPE OF WORK

Following shall be the scope of work:

SUPPLY: The scope of work of the Bidder includes the complete design, manufacture, supply, testing, packing, transportation to site, storage, handling of Automatic Fire Detection and Alarm System and its associated equipments, cables and installation accessories required on a turnkey basis.

System shall broadly consist of following sub systems installed in one free standing panel of size 2100mm X 800 X 800 mm (H X W X D): Addressable Fire Alarm Detection Panel Battery Backup for Fire Alarm System with Stabilizer Interfaces and Group Alarms to PA system, TAS System and ESD system

Other Systems:

Repeater Panel in Security Cabin and P/L Control room with Mimic Alarm system & Integration with TAS & electric Sirens.

ERECTION TESTING & COMMISSIONING: Transportation to the place of erection from store, erection, testing and commissioning of Fire Alarm System under scope of supply.

The scope shall broadly cover but not limited to the following:

State of art microprocessor based intelligent addressable analog fire detection and alarm system comprising of Addressable analogue intelligent smoke detectors for Admn block/ Electrical / server room etc., Manual call points, Response Indicators, Microprocessor based intelligent fire alarm control panel, Hooter and accessories.

SMF Battery backup for 4 hours and float cum boost charger in - built to the panel.

All types of cables & cabling accessories.

GI Pipes / GI Conduits / Metallic trunking and other accessories wherever required for laying of cables.

Minor civil work required for installing fire alarm system equipment.

All erection accessories, consumables and miscellaneous material not indicated in specification but required for completing the job in all respects.

Preparation of Design and detailed engineering drawings.

Submission of operation and maintenance manuals.

Submission of as built drawings.

Earthing - Extension of nearest available power earth ring to the panel location and connecting the equipments to the earth ring as per IE rules and safety guidelines. Provision of special earth for equipment electronics.

DETAILS:

The scope of work of bidder shall include all the items as per enclosed "Schedule of Equipment" for each terminal to make the system complete in all respects. In conformity with the technical requirements as spelt out in this specification. Any balance items, which are not explicitly spelt out here, but are required for the completeness of the work, shall also be included in bidder's scope.

Erection materials including pipe fittings, mounting glands, galvanized and perforated cable trays, cable racks, conduits, junction boxes, clamps, cable glands, channels angles and other materials required for completeness of erection shall also be covered under Bidder's scope.

Supply and laying of cables of all types inside suitable conduit /pipe/ducts (to be provided by the Bidder) including dressing, ferruling, glanding and termination etc.

The total quantum of all types of cables required to fire detection and alarm system is included in the scope of work of the Bidder on lump - sum basis. They will be supplied and installed as per specification supplied / approved by client.

The Bidder shall co - ordinate with other agencies doing electrical / instrumentation works for cable route.

AREAS

The terminals comprises of Admin. Area with server room, computer Lab, Electrical Room, classroom, faculty cabins, corridor etc.

DESIGN PARAMETERS

The ambient temperature and relative humidity details are as follows :

a.	Temperature	55° C Max.
b.	Relative humidity	95% Max.

The system shall be designed with following particulars:

a.	Primary Power Supply	240 V + / - 10 %, 50 Hz + / - 5% Single
b.	Operating Temperature	48 deg C max.
c.	Alarm for fire condition	Two tone distinct audible alarm
d.	Alarm for system fault condition	Single tone distinct audible alarm

The system shall have in-built facilities for deriving power-supplies required for operation of the system from the main supply.

Suitable protection shall be incorporated on the input sides of derived supplies against over current, accidental reversal of polarity and over voltage. Automatic recovery „shall be possible or the removal of overload/fault.

Suitable backup power supply system, adequate to supply backup power to the system for a period, not less than four hours (1 hour for alarm condition) in case of normal power failure shall also be provided. Battery used for back up power shall be Sealed maintenance free type.

GENERAL CONDITIONS

The Fire Detection & Alarm System shall be UL certified; designed, manufactured, supplied, erected and tested as per the requirement laid in relevant NFPA/ Indian Standard specifications.

The Microprocessor based, Analog addressable Fire Detection & Alarm system shall be complete in all respects and any device not included in the specification but essential for proper operation of the system shall be deemed to be within the scope of the Bidder whether specifically mentioned in this specification or not.

The system shall be designed keeping in view the spare capacity in the hardware wherever possible and logical, in order to accommodate for future expansion and / or modification.

All nameplates, drawings, operating and maintenance instructions etc. shall be in English/Hindi/local language. The dimensions, weights shall be in metric units.

All equipment, materials and components supplied shall be newly manufactured and without loose or temporary cabling. Wired options used in the system hardware shall be minimum.

All components shall be rated for continuous operation.

All metal parts of frames, supports etc, shall be mechanically rugged and constructed of corrosion resistant material or treated with anti-corrosive finish.

Adequate ventilation and cooling arrangements shall be provided; for heat dissipation.

All cables for inter bay connection shall be of plug in type.

All power supply shall be through. MCBs with suitable marking for the different ratings to enable easy identification and replacements. The system shall be protected against malfunctioning on account of noise from electro magnetic or electrostatic sources like power supplies, radio system, fluorescent tubes, motors,` electric) mechanical relay circuits etc.

All imported items shall bear UL, USA I FM, USA certificate/ approvals and BIS approval certificate for any Indian Supply. All detectors shall have UL / FM approval

The detectors shall be located and spaced as per latest NFPA codes.

For the items not covered in the specification, the Bidder shall furnish the full details of such items that he proposes to offer with the details of the standards followed.

The Fire Detection & Alarm System equipment shall be suitable-for operating at 240 V + 1.0 +/- 15 %, single phase, 50 Hz + / - 5 % power supply. If the equipment is required to, operate at any other voltage level, then necessary transformation / conversion and distribution of required power supply shall be in Bidder's scope.

All terminal blocks shall have at least 25% spare terminals (minimum being 4).

All bought out items like cables and other accessories shall be supplied by the successful Bidder strictly as per the list of preferred makes indicated in the specification.

Point/ clause-wise compliance of the specification shall be furnished by the Bidder along with his offer

No separate payment will be made for supply of any material required for installation of equipment like mounting. structures etc., As such the cost of the installation material required shall be included along with respective equipment.

It is the responsibility of the Bidder to assess the type and magnitude of work involved based on information furnished by the owner in this document and general :field conditions.

Bidder shall clearly indicate deviation; if any, from this specification, in the offer.

SYSTEM FEATURES:

The Fire Detection and Alarm system shall be State of the art microprocessor based, software controlled automatic system with necessary programming functions, annunciation and controls. The system will consist of a UL listed Microprocessor based Fire Alarm Panel, Analog addressable smoke detectors (photo- electric), Analog addressable fixed temperature cum rate - of - rise heat detectors, combination detectors, addressable manual call Points with the necessary enclosures including explosion proof call points, Electronic sounders/ hooters Addressable Fault Isolation Modules, Response indicators, Repeater panel, Control modules and Other units/accessories as required.

In the event of fire, detectors shall, sense and transmit the signal to the Main Control Panel. Audio-visual alarms shall be initiated simultaneously on main control panel, repeater panel, if any and locally. Main control panel shall display the address of the detector where the smoke / fire has been sensed: Main fire alarm panel shall be provided with a block type mimic display/ backlit LCD display for indicating fire zones, detector address and LED's for fire and fault conditions.

The total area under surveillance shall consist of suitable number of detector loops. Detectors and Local Response Indicators shall be installed depending upon the area under monitoring. Local response indicators shall be provided for

detectors installed either above false ceiling or below false flooring, if any, and shall be installed at a place where it is easily visible.

Various detectors used with the system shall continuously report about the general condition of the area being monitored.

Cross zoning, of detectors shall be provided preferably in all the areas to be covered under fire detection system.

Repeater panel shall be provided at the Fire station of terminals, wherever existing. Supply and laying of required cables from Main panel to Repeater Panel shall be included in the scope.

The system fault audio alarm shall be differentiated from the fire audio alarm.

A test switch shall be provided at the main panel to check the proper functioning and healthiness of the system."

Provision shall be kept in control panel to add detector loops, if required in future.

A number of control modules shall be included in each loop of the system(at least two nos. unless specified for more) so that the system can be suitably interlocked with ventilation / air conditioning system to prevent further spreading of fire.

There shall be provision for automatic operation / actuation of fire fighting - system e.g. Water sprinkling systems etc. after detection / confirmation of fire through fire detection and alarm system.

The fire detection and alarm system shall have following functions/ provisions:

Detection of fire in the incipient or smouldering stage.

Facility of interchanging photoelectric and heat detectors.

Suitable battery back-up and FCBC for un-interrupted performance.

Dual tone hooters for differentiating between fire and fault audible alarms.

Fully supervised for all fault conditions i.e. fail safe operation.

Automatic uninterrupted changeover to backup power source in the event of main supply failure.

Pinpoint indication of location of fire.

Exclusive wiring, independent of Mains power and other wiring.

Decadic/ micro switches on the detectors for addressing.

SYSTEM COMPONENTS:

The Fire detection & alarm system shall broadly consist of the following:

- Main control panel (In TAS Control Room)

- Manual call stations.(Break Glass Type)
- Fault Isolation Modules
- Response indicators
- Electronic Hooters
- Detectors (Photo Electric / Heat / Combination)
- Repeater Panel
- Integration with TAS & other systems viz. PA System, Electric Siren

MAIN CONTROL PANEL

Fire alarm, control panel shall be intelligent, with its own Microprocessor and memory. It shall be enclosed, wall / floor mounting type of modular design. Entire panel shall be designed with solid-state circuitry and provision to house required printed circuit -cards. It shall operate on 240V AC mains with a provision for operation through battery backed-up power source during mains failure. ,

The control panel as a built in feature shall have one/ two loop modules with 2 loops per module. Each loop shall be able to take at least 159 detectors and 159 devices. Control panel shall have provision for future expansion so that additional loops can be created by addition of loop cards modules.

The control panel shall have necessary hardware and software modules for the following:

- Alarm output and control output for various control functions.
- Facility to process the input data received from addressable analogue type detectors addressable interface unit.
- Electronic filters to ignore false alarm and increase sensitivity to real fires from-sensors. The electronic filters shall recognize the unwanted alarm from detectors due to electrical spikes.
- Separate backlit display area to indicate the address of each device and clear text about the location of alarm / trouble.
- The facility to support a graphic workstation comprising of PC, Printer, Keypad, Mouse, Peripherals etc.
- Printer facility to print out the alarm / trouble occurrences.

Control Panel shall have the following features -

- Logging and storage of alarms and faults.
- Status checks of disabled alarm addresses before they are restored.
- Programming facility to “create” “add”, “delete”, “modify” the loops and detector addresses. For this purpose an alphanumeric keyboard shall

be preferably integrated with the Control panel.

- Programmable activation of control output relays for tripping ventilation system, AC system and closing of fire doors in the event of fire.
- The possibility of connecting to non-addressable detectors, manual call points, alarm initiating devices etc.
- The fire alarm control panel display shall have facilities of brief -user guide menu to enable the operator for proper use of various menu functions.
- The sensitivity of each addressable analog detector shall be changeable and readable at the control panel.
- Each addressable detector, interface units-can be disabled from panel for maintenance purpose and restore the same whenever required.
- The status check of each detector, interface units for alarm, prior warning, trouble, disabling shall be possible from control panel

The fire alarm control panel shall be able to provide the following test and operator interface features:

Acknowledge	To acknowledge the alarm
Automatic day / Night sensitivity Adjust	To have higher sensitivity during unoccupied Period.
Device Blink Control	For flashing LED's on the detector.
Drift Compensation	For compensating the detector. Response due to Environmental changes.
Pre-alarm control panel	For early-indication of fire in the incipient stage.
System Status Report	Documentation of various system parameters.
Alarm Verification, by device	To eliminate generation of false alarm out to Dust / cigarette smoke.
Printer Interface	For printer interface which is used for system Documentation.
Periodic Detector Test	For detector testing from the panel which Eliminates the need for testing the detectors in the field every now and then
Trouble Reminder	To remind the operator of the maintenance required at the individual detectors.
Upload /download to PC	-For programming the panel in the first power up. Integration with TAS System for monitoring/ troubleshooting/logging of alarm/event
Walk Test	The entire loop can be tested by a single person with the print out at the printer.

The system display shall provide a backlit alphanumeric Liquid Crystal Display (LCD) for at least 80 characters and an alphanumeric keyboard for entry of any alphanumeric information and field programming. All system functions shall be

controlled from the panel through the keyboard and display unit. It shall also provide five, Light-Emitting-Diodes (LED's) that shall indicate the status of the following system parameters: AC POWER, SYSTEM ALARM, DISPLAY TROUBLE and SIGNAL SILENCE.

Two different password levels shall be accessible through the display interface assembly to prevent unauthorized system control or programming.

The system display shall include the following operator control, switches: SIGNAL SILENCE, LAMP TEST, RESET, SYSTEM and ACKNOWLEDGE.

The following indications shall be provided in the main control panel:

Fire condition.

Pre - alarm indication.

System test.

System Fault.

System isolation.

Alphanumeric display for fire address, function menu etc.

Stand by Battery Low.

AC failure.

Others as required.

The panel shall be dust and vermin proof and shall be fabricated of CRCA sheet of not less than 2 mm thickness and conform to IP: 42 protection class.

Paint shade of the panel shall match with that of the walls of the room and other equipments in the room.

The front door of the panel shall be provided with transparent glass for easy monitoring to the status of the system. There shall be provision for locking up of the panel: All the controls and indication shall be mounted on the front side of the panel and all circuitry and equipment for the working of the system shall be housed within the unit.

Suitable terminal blocks shall be provided for termination of external cables and provision shall be made for mounting of cable glands or conduits whichever is applicable.

Facility shall be provided for connection of external hooters, which shall be energized in case of fire within any of the area under surveillance.

Provision shall also be made for connection of a Repeater panel(s).

The Main FA Panel shall be Floor mounted of size 800mmx800mmx2100mm height. The Main Panel shall be installed in the TAS Control Room along with other TAS Panels.

MANUAL CALL STATIONS:

Manual call stations shall be wall structure mounting break-the-glass/ pull-down cover type and shall be located near the exits, staircases or lift so that in case of fire being spotted by the personnel in the premise, they can actuate the alarm. The unit shall be addressable and communicate with the FAP like other detectors. In case of break glass type, the unit shall be supplied along with a hammer chained with the unit for breaking the glass marked, "In case of fire break glass." Manual call points for outdoor mounting shall have IP-65 enclosure protection and in explosion hazardous areas shall have explosion proof protection. The explosion proofness shall be certified by either CMRI or any other recognized organizations

FAULT ISOLATION MODULE:

Fault Isolation Module shall be used in the detector and device loops to detect a wire-to-wire short and electrically isolate that condition from the circuit so that communication is maintained with unaffected devices on the same circuit. Fault Isolation Modules will be provided at an interval of 12 detectors in a loop for isolating the faulty detectors.

RESPONSE INDICATORS:

Response indicators shall be Visual indicating type and shall start flashing when the detector in that particular area / zone has been activated due to smoke or fire. This is to be connected with individual detector installed at places where they are not easily visible e.g. above false ceiling or below false flooring, to give repeat indication of the particular detector state. During normal polling the LED shall blink at a lesser rate same as that of detector. The LED's of the response indicators shall be housed on aesthetically designed PVC/ FRP bases with matching colour of mounting surface. The response indicators for a group of detectors in a premise may be placed on a common base.

The control room shall be provided with red LED response indicators at the entrance for easy identification and one hooter shall also be provided.

ELECTRONIC HOOTER:

Electronic hooters shall be used for audio alarm to alert people in case of fire and shall be fully solid state with audio output sufficient to be heard at a distance not less than 50 m. The hooters shall have facility for adjustment of volume as per requirement at site. The units shall be located at vital places and shall have minimum audible level of 65 dB or 5 dB above noise level of the working area and in the plant area also. Hooters shall preferably be connected to the detector loop using addressable control module and shall be powered from the panel using same detector loop.

The unit shall be of rugged construction, have weatherproof protection and suitable for outdoor mounting. The hooters required for outdoor mounting shall have rain canopy for protection from rainwater and direct sun.

DETECTORS:

i. PHOTOELECTRIC TYPE SMOKE DETECTORS:

Photoelectric type smoke detectors shall be low voltage, two wire, solid-state devices that provide for integral communication with microprocessor based fire detection system. The detectors shall be able to communicate with the control panel regarding individual address, sensor type and analogue signals. The main control panel shall analyse the signal value to determine the status of the detector e.g. "alarm, pre alarm, fault etc."

Detectors shall be ceiling / wall mounting type and shall be used to detect visible and invisible smoke particles produced during the incipient stages of a developing fire. Fire may include smoldering and fast burning fires of wood, paper, rubber, natural and synthetic fabrics, plastics and common liquid hydrocarbons.

The detectors shall have the following features.

Early detection of fire conditions.

Continuous monitoring of sensor status.

Fast response.

Corrosion resistant coating.

Dual LED's to provide 360 - Degree viewing.

Easy disassembly for cleaning.

Sealed sensor head to prevent entry of dust, dirt, insect's etc. to reduce nuisance alarms.

Technical Particulars

- | | |
|--------------------------|------------------|
| a. Operating Voltage | : 15 - 28 V dc |
| b. Operating Temperature | : 0 to 45 Deg. C |
| c. Humidity | : 0 to 90% RH |
| d. Approval / Listing | : FM / UL |

Photoelectric smoke detectors will be used for Electrical control rooms, MCC Rooms,

Computer Rooms etc.

HEAT DETECTOR (ELECTRONIC THERMAL SENSOR) :

These shall be analog addressable, fixed cum rate of rise type and designed to operate when the ambient temperature rises beyond a fixed temperature or if the rate of rise is faster than the pre-determined rate and allowing the increase/ rise for a specified period.

The detector shall be low voltage, two wire, solid-state device that provides for integral communication with microprocessor based fire detection system. The detectors shall be able to communicate with the control panel regarding individual address, sensor type and analogue signals. The main control panel shall analyze the signal value to determine the status of the detector e.g. "Alarm, pre-alarm, fault

etc.

The detectors shall have the following features:

Dual thermistors for fast response to temperature increases.

Continuous monitoring of sensor status.

Corrosion resistant coating.

Dual LED's to provide 360-degree viewing.

Easy plug in of sensor heads to common base

Sealed sensor head to prevent entry of dust, dirt, insects etc to reduce nuisance alarms:

Technical Particulars		
a. Operating Voltage	:	15 - 28 V dc
b. Operating Temperature	:	0 to 45 Deg. C
c. Humidity	:	0 to 90% RH
d. Approval / Listing	:	UL
e. Alarm temp.	:	Preferably within 10 Deg. C of max
		Operating temp.

COMBINATION DETECTORS:

Combination of heat detector and photoelectric detectors are envisaged for premises where safety of property is involved such as Battery/ Battery charger room, etc.

REPEATER PANEL

The repeater Panel shall duplicate all the audio-visual annunciation initiated at the main panel. The display and control functions provided at repeater shall be same as that of Main panel. The unit shall be aesthetically designed, suitable for wall / structure mounting. The unit shall be designed for power supply and operating conditions, same as that of Main panel.

Battery backup along with charging facility shall be provided for uninterrupted operation of the unit at least for 4 hours in case of the mains failure. Switching over to battery operation shall be automatic without any disruption.

CABLES AND CABLE LAYING:

GENERAL:

The detector wiring shall be of CLASS A type.

All detector loop cables shall normally be two core, multistranded, annealed copper conductor, armoured with PVC insulation, FRLS outer sheath as per IS-1554 Part-1 and 10853 Part-53. Other specific requirement of detector cables, if

any, shall be clearly mentioned by the Bidder. Power cables shall be 3 x 2.5 sq. mm, Cu conductor, PVC/PVC cable conforming to IS 1554, Part-I.

All detector circuit cables shall be armoured and inside premises the same shall be clamped to the wall / ceiling.

In general out-door cables shall be laid on cable trays/ trenches and shall be armoured.

CABLE LAYING:

- # Cables shall be laid in ducts, racks, trays, in GI pipes and PVC conduits as per site conditions and plant practice. Trenches shall be made exclusively for cables of this package and shall not be combined with any other cables.
- # All cables shall be tested for proper continuity and insulation before laying.
- # Care shall be taken that kinks, twists or mechanical damage do not occur to the cables during laying.
- # All cable bends shall be made with due consideration to the minimum permissible bending radius of the cables.
- # Care shall be taken that during laying of cables, loops are not formed.
- # While pulling of cables, they shall not be allowed to be dragged along the ground or over a second cable already laid.
- # All cables shall be tested for the healthy condition after laying.

DRAWINGS AND DOCUMENTS:

Following drawings / documents shall be submitted in six sets by the successful Bidder along with the supply of equipment.

Technical specifications/ Data sheets for each component of fire detection & alarm system.

Manufacturer's catalogue for the above.

General arrangement / system configuration drawing for fire detection and alarm system.

Wiring diagram for fire alarm panel.

Cable schedule routing drawing, cable termination details etc. For fire alarm system. Layout details of Detectors and other field devices. Safety features-for fire alarm system. Instruction manuals for maintenance and operation as well as erection of the equipment supplied. Power supply scheme. Total power requirement. Battery capacity calculations.

QUALITY ASSURANCE, INSPECTION & TESTING:

General Requirement of Quality Assurance:

All materials, components and equipment covered under the Technical specification for this Project shall be procured, manufactured, -tested, erected and commissioned as per a comprehensive Quality Assurance Programme. It shall be the primary responsibility of the contractor to draw up and implement such a programme which shall be duly approved by the IIM Indore/ Inspection Agency.

The detailed Quality Assurance Plan (QAP) for manufacturing and testing of equipment shall be prepared by the contractor and submitted for approval by the IIM Indore.

Inspection and Testing at the site of work:

The contractor shall furnish all relevant documents and test certificates as required by the IIM Indore. Materials shall be tested only in recognized Test House / Laboratory.

GUARANTEE & WARRANTY:

All the equipment supplied and jobs carried out by the Bidder shall be guaranteed for satisfactory performance for a period of 12 months from the date of completion of the project.

RESPONSIBILITY:

The contractor is fully and solely responsible for timely completion and guaranteed performance of the equipment and system despite any APPROVAL / CONCURRENCE given by IIM Indore.

APPLICABLE CODES AND STANDARDS:

SL. NO.	CODE NUMBER	DESCRIPTION
1.	IS-2189-1988 Reaffirmed in 1998	Code of practice for selection, installation` and maintenance of automatic fire detection' and s system (second revision -Amendment-11).
2.	IS-5-1994	Color for ready mixed paints and enamels
3.	IS-9537PART-11- 1981,	Specification for conduits for electrical wiring.
4.	IS-1554 PART-1-.. 1998	PVC insulated (heavy duty electric cables part-l working Voltages up to & including* 11QOV (Third Edition-Amendment-l).
5.	IS-10810 PART- 53-108.4` Reaffirmed in 1991	Method of test for cables part-53-flammability test.
6.	ISA 255A 983 Reaffirmed in 1991	Code of practice for installation and maintenance power cables up to and including 33kV rating. (Second revision - Amendment - 1).
	IS-3043-1987	Code of practice for Earthing.

7.	Reaffirmed in 1991	
8.	NFPA72	Code for design and installation of Automatic Fire Detection and Alarm System

List of Approved Makes (Electrical)

S.No.	ITEMS	APPROVED MAKES
1.	PVC pipes and accessories	Precision/Avonplast/Grand/AKG/Kundan cab/Modi
2.	Copper multi-strand wires	Polycab/Finolex/KEI/RR KABEL
3.	Switches/Sockets/TV Socket etc. (modular)	Legrand (Myrius)/MK(wrapround)/Crabtree
4.	MCB/RCCB/ACB/D.B	Schneider/L&T/ Legrand/ Siemens /ABB/GE
5.	Industrial sockets	Legrand/Schneider/L&T
6.	Fan Regulator	Legrand (Myrius)/ MK
7.	Wires and UG Cables	Polycab/Finolex/KEI/RR KABEL
8.	Cable glands	Dowels/Braco/Siemens/Comet/Jainco
9.	Cable jointing lugs	Raychem/CCI-Xicom/Cabseal/Mseal/Denson
10.	Ceiling Fan/Exhaust fan	Crompton/Bajaj/Orient/Usha
11.	Light Fixture	Philips/Crompton/Bajaj/Wipro
12.	Telephone Wire/cables	Finolex/Delton
13.	PVC pipes and accessories	kasta/kisan/AKG/Precision
14.	Capacitor	Schneider/L&T/ ABB/Siemens
15.	CT's/PT's	AE/Kappa/Pragati/Megavin/Reco
16.	APFC relay	L&T/Emerson/Alstom/GEC
17.	Contactora/timer/starter	L&T/Cuttler/ Schneider/ ABB/Siemens
18.	Ammeter/voltmeter/multifunction meter/frequency meter/power factor meter/ Indicating Lamp	AE/Rishab/Conzerve/ ABB/L&T/ Elmeasure
19.	LT panel/APFC Panel Manufacturer	CPRI/ERDA approved manufacturer
20.	Fire Panel	Bosch/Honeywell/Notifier/Tyco
21.	Fire Detectors	Bosch/Honeywell/Notifier/Tyco

TECHNICAL SPECIFICATIONS FOR AUDIO VISUAL SYSTEM

Wi-Fi Enabled Projector
Brightness: 4200 Lumens or above
Resolution: DLP
Contrast Ratio: 3000:1 minimum
Network Projection should be possible using LAN Cable. Projector must be capable of projecting same or different contents within same network.
Zoom Ratio: 1-1.6 manual (Optical)
Keystone Correction: Automatic (Both Vertical and Horizontal +/-30 Degrees)
Connectivity: 2 VGA, 1 HDMI, 1 RJ 45, 1 RS 232, 2 USB, 1 Display Port, 1 composite Video and respective Audio inputs.
Wireless Connection: Must be built in (802.11 b/g/h)
Built in Speaker of 10 Watts or higher
Power Consumption in Normal Mode: Less than 350 Watts
Weight: less than 4 Kg
Lamp Life: Min. 2500 hours in full brightness mode
Motorized Projection Screen
Motorized with Wired Switch
4:3 Format, 123" Diagonal
65" x 104" (HxW)
Matte White Fabric
Professional Stereo Power Amplifier
Max/rated output power 180 W/ 120W
Sensitivity 1mv
THD <1%
Signal to Noise Ratio 63DB- 75DB
Input Impedance (nominal) >1 kilohms
UHF Wireless Lavalier Microphone
Include Receiver, lavalier Mic & Bodypack Transmitter
Receiver
Carrier frequency range: 500 - 865 MHz
Audio bandwidth: 40 - 20,000 Hz
Signal/noise ratio: typ. 105 dB(A)
Squelch threshold: -100 to-70 dBm adjustable
Bodypack Transmitter
RF radiation: 10 mW
Battery life: 10 hours typ.
THD: typ. 0,8 % (at 1 kHz)
Carrier frequency range: 500 - 865 MHz
Audio bandwidth: 40 - 20,000 Hz

Lavaliere Mic
Polar pattern: Cardioid
Frequency range: 15 to 18,000 Hz
Impedance: 200 ohms
Max. SPL: 118 dB (k=1 %)
Sensitivity: 8.8 mV/Pa (- 41 dBV)
Control Processor for AV equipments
3 Bi-directional RS232 ports
4 Relays, 4 contact closure inputs
4 IR ports for one way control of external devices
IR Learning capability
Integral High Performance Web Server
Ethernet Control
Weight should be less than 500 gms
7" Wall/Table Mounted Wired Touch panel
7" Wide screen colour touch screen with 800x480 resolution and 18-bit colour depth (Must be wired)
10 field-label able backlit buttons for expanded control
User-friendly volume knob for simple and intuitive volume control
Full-motion video display for preview and monitoring
Compatible with all IP Link control processors
Resistive Membrane touch Screen
Built in Speaker, Motion Detector, Auto Dimming features
Configurable display Sleep Timer
Should be able to take power from Ethernet and external Power Adapter
Presentation Scalar/Switcher
Scaled Outputs - HDMI & RGBHV (5 BNC) & 15-pin VGA simultaneously
Output - Up to 1920x1200 or 1080p
Embeds Audio on the HDMI Output.
Audio Delay - 40ms, 110ms, 150ms or Disable
Control - RS-232, Ethernet & IR
Built-in Proc-Amp
Video Inputs- 1 composite, 1 S-Video, 2 component, 1 computer graphics (15-pin HD) & 2 HDMI.
Standard 19" 1U rack mountable with ears
HDTV compatible and HDCP Complaint
Twisted Pair Transmitter
RJ-45 Connector
100m Range
EDID & EMP Protection
HDTV Compatible & Max Resolution WUXGA & 1080p
15 VGA Input connector
Twisted Pair Receiver
Level & EQ Controls
100m Range

EMP Protection
HDTV Compatible & Max Resolution WUXGA & 1080p
15 VGA Output connector
VGA Distribution Amplifier
Input: One female 15-pin HD connector, Outputs: Two female 15-pin HD connectors
Compatible with VGA-QXGA resolutions
Gain & Peaking controls
350 MHz (-3 dB) RGB bandwidth, fully loaded
Rack-mountable or portable
Power and source signal indicator
Full HD Video Conference Unit (Point to Point)
Features include:
- Video up to: 1080p30, 720p60
- Data up to: 1080p/WUXGA 30fps
- Full band audio
- H.239 send and receive
- H.239 send and receive
- Dual screen support
- 12Mbps bandwidth
- Should have Embedded 9 (1+8) Party MCU built in VC Codec. Software license can be purchased later as and when required. Hardware must remain same
HD Camera with PAN / Tilt: $\pm 100^\circ$ / $\pm 25^\circ$ Zoom: 10x (optical) & 4X Digital Resolution: 1920 x 1080 Presets: more than 100 Field of View (horizontal): up to 70 Degree Far End Camera Control: H.224, H.281 720P @ 60 fps
Digital Mike Array with 360° Range Frequency Response: 50 - 22,000 Hz Mute button Up to 2 cascaded Mike pods
AV Interfaces: Video inputs: 2 x HDMI (Up to 1080p30) x DVI-I (Up to 1920x1200 WUXGA, includes VGA cable adapter) Video outputs: x HDMI (Up to 1080p30) for dual display Audio inputs: 2 x HDMI 1 x SPDIF (RCA) x Microphone Array Pod (RJ-11) Audio outputs: x HDMI 1 x SPDIF (RCA)
Communication IP: H.323, SIP ISDN: H.320 Bit rate: H.323, SIP: up to 4/12 Mbps H.320: up to 2 Mbps MCU compatibility: H.243, H.231

<p>Video: Support for 2 simultaneous 1080p30 channels: camera + auxiliary camera or camera + content H.261, H.263, H.263+, H.263++, H.264, H.264 Dual Video: H.239 (H.323); BFCP (SIP)</p>
<p>Network Interface: 1 x 10/100 Base-T full-duplex (RJ-45) 1 x 10/100/1000 Base-T full-duplex (RJ-45)</p>
<p>Security Features: Embedded encryption Key generation and exchange with Public-Key Cryptography (Diffie-Hellman), (H.323, SIP) H.235 AES 128 Confidentiality for RTP media H.235 MD5 Authentication H.235 Authentication and Integrity (H.235v3/Annex D) Digest Authentication Microsoft NTLM Authentication and Session Security (SSP) HTTPS, SSH Selective Enable / Disable of IP features</p>
<p>Network Features: SNTP date and time synchronization Auto Gatekeeper discovery IPv4 and IPv6 simultaneous support IP adaptive packet management including: -Flow control -Packet Loss based down-speeding -Packet Loss recovery policies DTMF tones: H.245, RFC2833 OoS support: IP Precedence, IP Type of Service (ToS)</p>
<p>Other Items as mentioned in Schedule of Items will be absolutely as per the specifications mentioned in Schedule of Quantities with desired brands.</p>

Placement area should have provision of displaying contents from PC (Analog & Digital), Video Source, Video Conference, Visualizer and contents sitting on server via LAN. All the signals must be scaled up to HDMI and then be fed to local Display i.e. projector and project on wall mount screen. There should be a table plate with all required connectors for faculty to connect the sources to display and audio system. Respective Audio from all the sources should automatically be selected and reproduced uniformly from wall mount speakers. The Lecturer and students must be in a position to hear each other clearly and there should be microphones installed to cover all of them. Students sitting with table must be covered for audio. Room should have easy & simple program/control to operate the class for various applications like teaching, group teaching and VC. Individual Remote controls for any of the AV equipments must not be used. VC dialling, presentation control, volume control should be done from centralized control/touch panel.

Scope of Work for qualified Bidder for Supply, Installation, Testing and commissioning of AV Equipments

Necessary coordination with Interior and Electric contractor for getting necessary works for installation of AV equipment's. Supply of AV equipments as per Schedule of Quantity. Installation of AV equipments to achieve listed functionality in each room. Configuration and programming, wherever required. Testing of the AV equipments installed in each room. Providing training (By trained engineers/Technicians) to various users nominated by IIM at the cost of bidder. Handing over the complete project to IIM Indore Project Department. Submission of Project report having all schematics, as built drawings, User/Operational Manuals, software CDs and Instruction chart etc. for all the rooms. Getting the AV works certified by the client i.e. IIM Indore.

Q. Formats for Different Forms/Certificates

Annexure-1

Undertaking having gone through the documents as per the Technical bid

Sub.: Tender for “Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”

NIT No.:- IIMI/Project/12/2017/45 File No.367

Dated: /...../2017

To,
The Chief Engineer,
Indian Institute of Management, Indore
Prabandh Shikhar, Rau-Pithampur Road,
Rau, Indore-453556

Dear Sir,

We have carefully examined the specifications, design and schedule of quantities relating to the work specified in the memorandum hereinafter set out and have visited and examined the installation site of the works specified in the said memorandum and have acquired the requisite information relating thereto as affecting the tender. We hereby offer to execute the works specified in the said memorandum within the time specified in the said memorandum at the rates mentioned in the Schedule of Quantities and in accordance in all respects with specifications, designs and instructions in writing referred to in articles of agreement, general instructions to the tenderers and special conditions, General Conditions of Contract, conditions hereinbefore referred to, specifications, schedule of works, data sheet and schedule of quantities and with such materials as are provided for, by and in all other respects, in accordance with such conditions so far as they may be applicable.

Memorandum

A.1.1	NIT No. :IIMI/Project/12/2017/45 File No.367		
A.1.2	Name of Work	“Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”	
A.1.3	Estimated Cost Put to Tender	Part-I: Civil & Joinery Rs. 1,03,79,515/- Part-II: Electrical & allied works ... Rs. 80,98,148/- ----- Total Rs. 1,84,77,663/-	
A.1.4	Earnest Money Deposit (Rs.)	Rs. 3,70,000/- (Rs. Three Lakhs Seventy Thousand Only) by e-payment through electronic mode	

A.1.5	Tender Processing Fee (Rs.)	Rs. 1000/- by e-payment through electronic mode (Non-Refundable)
A.1.6	Completion period	FOUR (04) Calendar Months including monsoon period
A.1.7	Mode of submission of tender	On-Line mode only

2. We also agree that our tender will remain **valid for acceptance by the IIM Indore for 90 days** from the date of opening of technical bid of the tender and this period of validity can be extended for such period as may be mutually agreed between the IIM Indore and us in writing. We also agree to keep the **Bank Guarantee towards earnest money** valid during the entire period of validity of tender and the extended period, if any, as per enclosed proforma. Should this tender be accepted, we hereby agree to abide by and fulfil all the terms and conditions of the contract and in default thereof, to forfeit Earnest Money Deposit and pay to you or your successors, or assignees or nominees such sums of money as are stipulated in the said conditions.

3. Should this tender be accepted, we hereby agree to abide by and fulfil all the terms and conditions of the contract and in default thereof, to forfeit Earnest Money Deposit and pay to you or your successors, or assignees or nominees such sums of money as are stipulated in the said conditions.

4. We understand that you reserve the right to accept or reject any or all the tenders either in full or in part without assigning any reason therefor.

Dated this _____ day of _____ 2017.

For and on behalf of M/s _____

(Signature with seal)

Name

Designation

Place

R.	FINANCIAL BID
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FINANCIAL BID

Name of Work: “Construction of Interior Fit Out for Faculty Cabins in the Academic Block of IIM Indore : Phase-II”

NIT No. : IIMI/Project/12/2017/45 File No.367

The Financial Bid is available on the e- procurement website <https://eprocure.gov.in/eprocure/app>